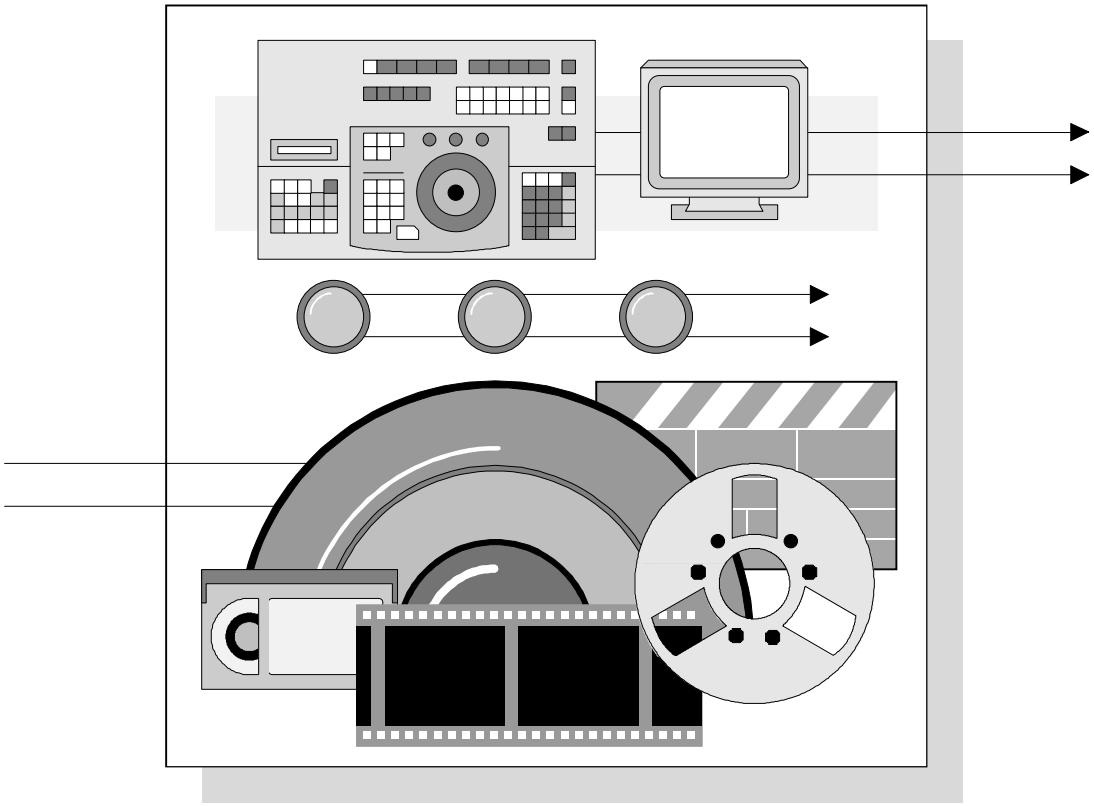
SONy

DME-7000
DME-3000

Product Guide



SONy

Digital Multi Effects Systems • DME-7000 • DME-3000 • Product Guide

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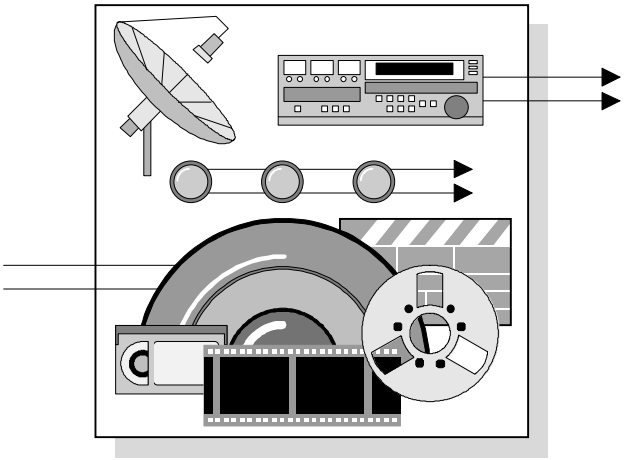
Introduction

About This Guide



Let's say your facility needs a new DME — the editors in the post division are constantly remarking that the clients want new multi-channel effects, with cleaner pictures and more dazzle. Let's say that the same facility's production unit needs a new digital effects system for the weekly magazine now in production — some simple moves plus a few page turns will suffice. And the same facility's remote unit could really use some sparkle — a certain sports director wants to fly each replay with trails.

Three different boxes? Three different control panels and user-interfaces? How about one, with the capability to handle all these requirements. Sony's "DME" series of Digital Multi Effects devices provides the answer. Both the DME-3000 and DME-7000 deliver superb picture quality plus a wide variety of effects — with the advantage of one simple control panel, human interface, and operating style!

To assist you with assembling the optimum DME system for your customer's needs, this guide is divided into the following chapters:

- **Chapter 1 — Features and Benefits**

  This chapter provides a detailed discussion of DME-3000 and DME-7000 features and benefits.

- **Chapter 2 — Configuration Guide**

  This chapter provides itemized descriptions of DME-3000 and DME-7000 features and options to assist with configuration planning. Two quotation request forms are included to simplify the ordering process.

- **Chapter 3 — Installation Guide**

  This chapter offers information and diagrams to assist with facility engineering and equipment integration requirements.

- **Appendix A — Feature List**

  This appendix provides a category-by-category description of DME features and modes.

- **Appendix B — Related Resources**

  This appendix lists additional written and visual reference material available for further reading on the DME-3000 and DME-7000.

- **Appendix C — Sales and Service**

  This appendix provides basic information about Sony sales, service, emergency response, and software support.

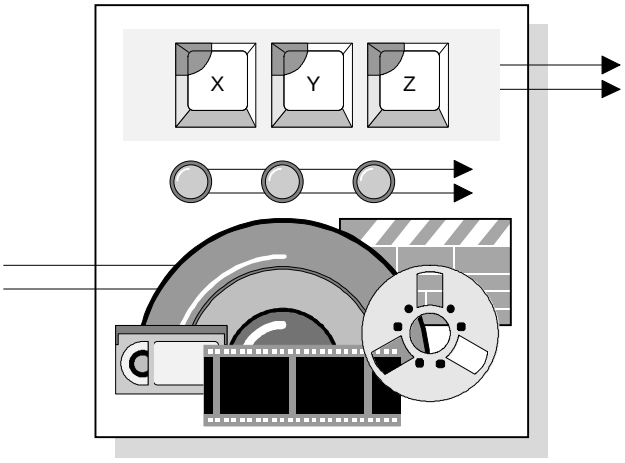
- **Glossary**

  The glossary provides a reference list of important special effects and video terms used throughout this guide.

A comprehensive “Index” is also provided for your reference.

Features and Benefits

DME-3000/7000 Feature Overview



This chapter provides a comprehensive discussion of DME-3000 and DME-7000 features, taking a complete approach to both the functionality and the benefits of the system's digital effects tools.

The following sections are included:

- The "**Talent, Creativity, and Quality**" section discusses the primary reasons why production personnel will choose the DME-series.
- The "**DME Toolbox**" section discusses large categories of DME features — both the basic features, and tools that operators value the most on the DME-3000 and DME-7000.

For an itemized approach to system features, refer to Appendix A, "Feature List." This appendix provides tables and descriptions of many DME features.

Note that some features described in the following sections may apply only when the Sony DME-3000 and DME-7000 are used with Sony DVS-7000 Series, DVS-2000C, BVE-2000, and BVE-9100 systems.

Talent, Creativity, and Quality

The DME-3000 and DME-7000 are artistic devices — for talented and creative video professionals. Whether the application is post, production, or remote, a DME effect can make the difference between an average transition and a spectacular one — between an average commercial and one that gets attention, and gets results!

Its difficult to summarize just how important the DME-series has become to the creative aspect of video production — from simple fixes (transparent to the viewer), to remarkable "look at me" effects, ripe with creativity.

One thing is clear, however — the decision to buy a DME-3000 or DME-7000 is not based exclusively on the number of tricks in the digital effects toolbox!

Granted, the DME-series has spectacular effects, including Digital SKETCH™, Digital SPARKLE™, and with the DME-7000, Advanced Shadow™.

Granted, the DME-series offers superb system integration through DME-LINK™, Keyframe-LINK™ and the powerful Processed Key functions offered by the DVS-2000C and DVS-7000 series switchers.

These criteria alone, however, are not enough to convince a customer that the DME is the right decision. There's one more important factor — high quality real time image manipulation.

Regardless of the application, image quality is the main ingredient in the DME's digital mix. No matter how spectacular the page turn, if the matchframe to the source isn't transparent — if the image quality isn't crisp — the effect loses its impact (and the customer can see the difference)!

Compact yet sophisticated, with a dynamic effects package backed by superb image quality, the DME-series is the right choice — an artistic device for talented professionals.

DME Toolbox

This section reviews the wealth of basic and advanced features found in the DME-3000 and DME-7000's digital effects toolbox.

Picture Quality

The DME-series provides brilliant images and superb picture manipulation capabilities. A number of innovative engineering and design factors make this possible.

The DME-3000 sets the standard for Sony's digital effects devices:

- **Input Processing** — All primary video and key signals are processed in 4:2:2:4 mode with 10-bit resolution.
- **Interpolation** — Image interpolation uses an adaptive process that compensates for motion in the processed picture.
- **Filtering** — To prevent noise, a high quality 33 x 33 multi-point anti-aliasing filter adjusts the bandwidth in proportion to the image transform.

The DME-7000 adds another layer of quality:

- **Enhanced Interpolation** — For remarkably clean effects, image interpolation is calculated from an 8 x 8 pixel grid, one of the largest sampling ranges in the industry. The benefit is very clear — the greater the number of pixels sampled, the higher the interpolation quality.
- **Enhanced Filtering** — Anti-alias filtering is pixel based. The optimum parameters are calculated for each pixel according to its position, which minimizes distortion and noise of the manipulated image.

Dynamic Visual Effects

Second only to picture quality, a DME's toolbox must be fully loaded with effects, both simple and advanced. Whether the operator is re-positioning a graphic, designing a spectacular multi-channel move, solving a visual problem, or bringing a complex storyboard to life, a DME must have the necessary tools at hand. Sony's DME-series delivers, with a full range of 2-D and 3-D tools.

DME-3000 Effects

The DME-3000's toolbox is brimming with creative effects:

- **Effect File Converter** — An effect file converter is provided for effect interchangeability between DME-3000 and DME-7000 systems.
- **Basic** — For the basic "bread and butter" moves, 2-D and 3-D effects such as location, compression, rotation, perspective, aspect, skew and axis location are standard.
- **Recursive Effects** — With the optional BKDM-3060 board installed, recursive effects such as film, trail, motion-decay, multi-freeze, and strobe are provided (... music videos are not included!).
- **Non Linear Effects** — If your world is looking a little too "flat," a full range of dramatic 3-D non-linear effects and modifiers are provided with the optional BKDM-3030 board. These include Wave, Ripple, Broken Glass, Lens, and Panorama effects.

  It is also possible to use a second video source for the backside of the page turn, with a single channel of DME-3000 or DME-7000. This capability requires the BKDM-3040 plus BKDM-7020, BKDM-3021, or BKDM-3023 boards.
- **Lighting Effects** — With the optional BKDM-3050 board, three realistic lighting modes are available, along with additional shading and highlight capabilities. The lighting modes may be applied to two light sources on the DME-3000. (Please note that Target Spotlighting and Spotlight modes share the same light source and are mutually exclusive.)

  The first lighting mode can be applied to the image prior to manipulation, the second can be applied after manipulation, and the third mode can be applied downstream of the first two lighting modes.

For example, in the case of a page turn:

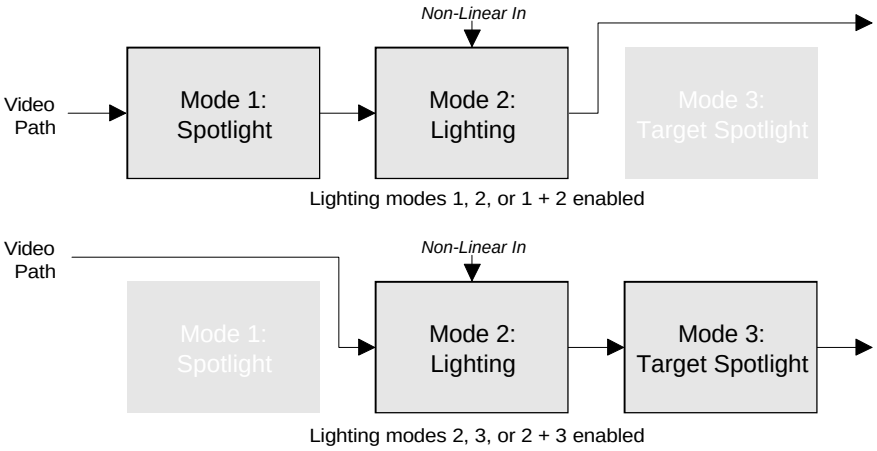
– Lighting mode one (**Spotlight**) places a light on the surface of the page, prior to 3-D transform. The light will be manipulated with the page in a non-linear transform — as if the light is part of the *original* image.

– Lighting mode two (**Lighting**) highlights the turning edge of the image during the effect, and casts a shadow on the page. During the page turn itself, lighting mode one is covered up by the turning page. Note that this mode *also* occurs prior to 3-D transform.

– The third mode (**Target Spotlight**) lights both the page *and* the turning edge of the image.

With the benefit of the DME-3000's lighting effects, the resulting image *greatly* increases the viewers perception of realism.

The figure below illustrates the different video paths when each lighting mode is enabled. Note that when **Target Spotlight** is enabled, **Spotlight** is disabled. This occurs because the two modes share the same light source, and are thus mutually exclusive.



- **Wipe Patterns** — With the optional BKDM-3040 board installed, images can be cropped by a closed wipe pattern (such as Star, Heart, or the Christmas Tree shape) without tying up an M/E bank on the production switcher. The wipe generator also masks images, creates spotlight effects, creates background color mixes and embossed color mix effects. In addition, the Spotlight, Target Light (DME-7000), and Target Spotlight modes can *also* use the wipe pattern.

  With masks in particular, if you're using a video modification such as mosaic or posterization, you can create a mask for the edges of the modification, position the resulting masked "window," and manipulate the mask within an effect.

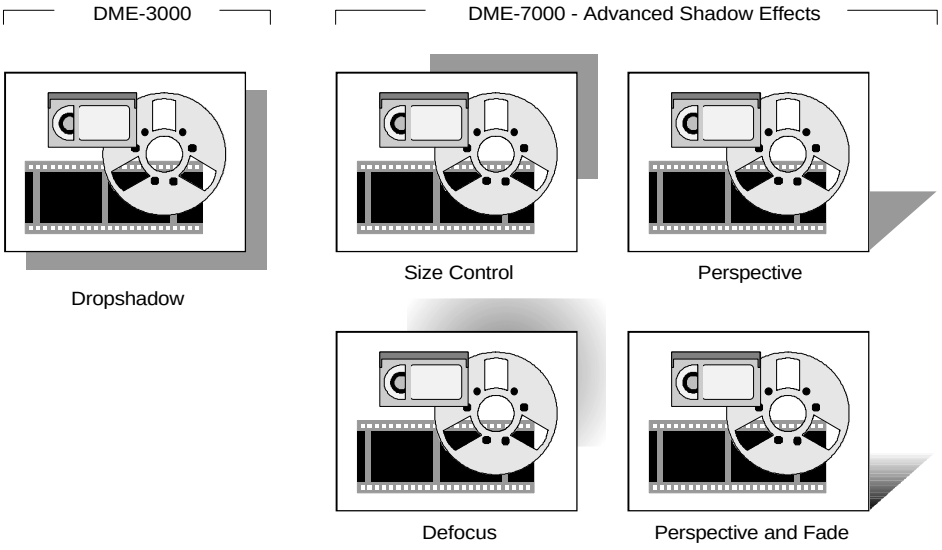
- **Graphic Display** — Getting lost in 3-D space? With the BKDM-3040 board installed, you can display graphic XYZ coordinates and grid patterns on screen.

- **Digital SKETCH™ Effects** — For the artist hiding inside you (with the optional BKDM-7041 piggyback board installed onto the BKDM-3040), you can turn images into oil paintings and stylized drawings, with a variety of creative beveled and colored "frames" available. In addition, the highly useful "Color Grabber" function is also provided with the Sketch option.
- **Digital SPARKLE™ Effects** — Your images will sparkle like diamonds! With the optional BKDM-7031 board, effects such as Explosion, Swirl, Multi-Mirror, Twist, and Kaleidoscope are provided.

DME-7000 Effects

The DME-7000's toolbox adds even more creative effects:

- **Effect File Converter** — An effect file converter is provided for effect interchangeability between DME-3000 and DME-7000 systems.
- **Advanced Shadow™ Effects** — With the BKDM-7070 board installed, more natural shadows can be created with precise 3-D positioning, perspective and depth defocus.



For even greater realism, shadow movement can be synchronized to follow the light sources. Best of all, only a single DME-7000 channel is needed.

- **Duality Operation** — This mode provides the ability for a second video image to be manipulated within a *single* DME-7000 chassis. The second or "sub" channel may positioned independently of the main channel, or it can be locked in symmetry to the main channel.

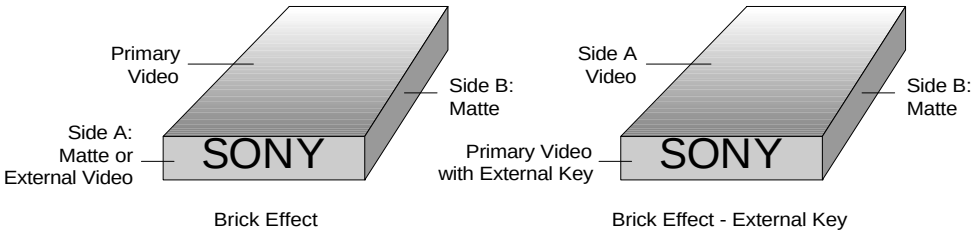
  The sub channel provides the following effects:

  – 3-D location and rotation
  – Posterization
  – Solarization
  – Sepia
  – Monochrome
  – Contrast
  – Bevel Edge
  – CCR (Color Correction)
  – Metallic
  – Freeze
  – Border
  – Mask

The sub channel video is provided from the EXT/C input connector, and must be an SDI signal. Duality operation requires either the BKDM-3021, BKDM-3023, or BKDM-7020 input options. Video effects require the BKDM-7021 board.

For added realism, shadow and lights may be applied to each video channel of Duality Mode.

- **Brick Effect** — Ever try to create 3-D solids with a single channel? It's easy!



With both the BKDM-7060 and BKDM 7070 boards installed, you can create brick-shaped objects and map video and matte color onto the surfaces — once again, with only a single DME-7000 channel! The brick itself can be transformed and rotated in 3-D space.

- **Defocus and Blur Effects** — Here's a chance to lose focus on purpose. The DME-7000 supports advanced Defocus and Blur effects, with reduced edge noise. The Blur can be independently adjusted for luminance and chrominance in the horizontal and vertical directions.
- **Glow Effect** — For that misty-morning illusion, you can soften highlighted areas and make them glow with both the optional BKDM-7060 and BKDM-7070 boards installed.
- **Advanced Lighting Effects** — Building on the DME-3000's lighting capabilities (with two independent light sources), the DME-7000 adds advanced spot light effects (providing a total of three light sources).

  An additional target lighting mode provides a realistic light source that can be added in space (as if it is originating from outside the screen) and cast onto the background and foreground. This light source can interact with the image location and transformation.

  When the DME image is keyed over a switcher background, or when it is used with the DME's internal background capabilities, target lighting provides three creative possibilities:

  – In "**Foreground Only**" mode, lighting is applied to the image's foreground. The light is cast from *space* — when a DME image moves under the light, the image is illuminated.

  – In "**Background Only**" mode, lighting is applied to the image *over which* the DME image is keyed. When the DME image moves over the background, the background light is covered up.

  – In "**Foreground plus Background**" mode, lighting is applied to the foreground and background together. When the DME image moves, it moves *under* the light cast from above, but the background light is not affected.

You can also select lighting that tracks foreground movement, or you can “fix” a target spot light in 3-D space that is not affected by movement of the foreground.

- **New Recursive Effects** — With the optional BKDM-7060 board installed on the DME-7000, additional recursive effects such as Wind, Rainbow-colored Trail, Random-colored Trail and Defocus Trail are provided.
- **Color Correction** — The Color Correction (CCR) process may be applied to either the main or duality “sub” channel. By up converting input signals to RGB, the BKDM-7021 board provides primary color correction for gain, black level, gamma, and knee of red, green and blue color space components.

  A secondary color correction stage for luminance, saturation and hue may be applied to each of the six color vectors (red, green, yellow, blue, magenta, and cyan). Luminance process (Luma proc) may be used to add color to the varying luminance values of an image.

  In addition, two creative functions are available with the CCR process.

  – A custom curve display provides direct access to primary CCR functions, simply by clicking and dragging the trackball or mouse.

  – An on-screen histogram provides clear indication of each RGB or Y/R-Y/B-Y component signal level distribution.

  Best of all, CCR adjustment values may be programmed on a keyframe-by-keyframe basis, and stored as snapshots.
- **Metallic Effects (ChromAlloy)** — These attractive color effects add a metallic luster to any input image. The base metal can be gold or silver, and you can also modify the image with a rainbow of colors.

  The metallic effect can be applied to either primary video or to video provided from the EXT/C input connector. In addition, a mask function is available for metallic effects when the BKDM-3040 board is installed, and the BKDM-7020’s assignable frame store can also function as the mask source.

  Note that metallic effect settings can be stored and recalled as keyframe or snapshot data.

Key Channel Input

With the optional BKDM-3060 (for DME-3000) or BKDM-7060 (for DME-7000) installed, the DME-series processes externally supplied keys in parallel with the video. This option allows you fly key and fill signals supplied by external devices such as character generators and graphics systems.

Keyframe Operation

Keyframes and timelines are integral parts of the DME-series. All effects are created from a bank of available keyframes — 998 on the DME-7000 and 680 on the DME-3000. Once created, effects can be stored in up to 99 registers (on both systems). And, because almost all digital effects require some degree of fine-tuning once they are programmed, a full complement of keyframe and motion path tools are available including linear, spline, smooth and step. You can also apply motion paths independently to each of the 3-D axes.

Snapshot

On the DME-7000, a separate memory system called "Snapshot" is provided. This system allows you to store individual keyframes (or screen positions) in up to 99 registers — outside of effect timelines. For the immediate recall of effects in which a single screen position is used, snapshots provide an economical and memory-efficient means of storage.

Floppy Disk Drive

For storage of keyframe and setup data, a high-density 3.5-inch floppy disk drive is standard in the Control Panel. The drive also provides an easy method for software upgrades.

DME-LINK™

Not enough hands to trigger the effect when the director points? Sony's superb DME-LINK is the answer! In conjunction with DVS-series switchers, DME-LINK runs the DME timeline from the switcher, and enables specified DME-3000 and DME-7000 effects to be run by the switcher's fader or auto-transition button — just like wipes and dissolves.

Over 30 basic effects are available for both single and dual-channel link-effect transitions. These include Slide, Split, Squeeze, Door, and Page turn. And on the DME-7000, up to 12 additional "user" defined effects can be recalled and run from the switcher.

Keyframe-LINK™

When the DME-series is combined with the DVS-series switchers, Sony's intelligent Keyframe-LINK function links DME and switcher timelines together. All linked timelines are displayed simultaneously on the switcher's display for easy and intuitive adjustment of each device's timeline.

Basic Switcher Interface

In addition to DME-Link and Keyframe-Link with Sony DVS-series switchers, an interface is provided for controlling the learn, recall, and run functions of the DME-7000. This interface works on switcher models from several different manufacturers who support GVG peripheral-II protocol.

Editor Interface

To underscore Sony's advanced systems integration, the DME-series can be serially controlled (just like a VTR) from the Sony BVE-2000, the BVE-9100, and editing systems from many other manufacturers. Taking control one step further, the BVE-9100 system offers full keyframe control including keyframe modification.

System Versatility

With a variety of input options available, the DME-series easily handles digital composite or digital component video signals with the BKDM-7020 I/O board. Moreover, with the BKDM-3022 or BKDM-3023 I/O boards, both analog and digital signals can be processed simultaneously. In digital component operation, signal processing can be switched between 525/60 and 625/50 standards, while in digital composite mode, only NTSC operation is available. The system is also switchable between 4:3 and 16:9 aspect ratios!

Intuitive Operations with Graphical User Interface

The most magnificent effects are meaningless — if you have to be a rocket scientist to operate them! To that end, the DME-series' control panel and Graphical User Interface (GUI) are designed with simplicity and clarity in mind. On the control panel, keys are grouped by function for clarity, and the convenient track ball and Z-Ring™ make image manipulations a pleasure. The Z-Ring eliminates the interplay between axes often found on other joystick-based DVE's, and offers the extra advantage of selectable fine or coarse control.

On the GUI, keyframes and timelines are clearly displayed and easily adjusted via mouse or control panel. Best of all, you can display two individual windows (of differing effect parameters) simultaneously, for accurate and efficient effect editing.

A wide variety of display options are available for viewing the DME's user menus, from large 20" displays to compact LCD displays.

For even faster operations, the following quick and easy "direct access" functions are available:

- **Top menu** — one button takes you to the top of any menu tree.
- **Last menu** — one button takes you to the last menu you were using.
- **Switch Window** — one button switches between the windows that you're adjusting on the GUI.
- **Color Grabber** — quickly allows you to grab a color that's on screen, and copy it to any of the DME's matte generators.
- **Quick Enabler** — allows you to conveniently add enhancements to an effect, such as trail, shadow, lighting, sketch, or beveled edge.

Ask our current customers — ease-of-operations is no buzz-word with the DME-series. It's a daily fact.

Multi-Channel Operation

You could be spoiled by the DME-series! No sooner will you be flying one channel — then you'll want to fly additional channels for even more dramatic effects. The DME-series makes it possible, with convenience, and the optional BKDM-3050 combiner board.

- Up to two DME-3000 channels can be controlled and combined from one BKDM-3010 control panel.
- Up to four channels of DME-7000 can be controlled and combined from one BKDM-3010 control panel, providing up to eight images on screen. In addition, the DME-7000 can access up to two DME-3000 channels, in place of two of the four DME-7000 channels.

Multi-Pause

Multiple pause points may be applied to each channel's timeline. This allows you to pause and manually re-start timelines as required, providing superb flexibility when timing DME effects to external events that may *not* start at predictable times — for example, an audience reaction during a show. Pauses on different timelines may be staggered, per the requirements of your effect.

Note that the multi-pause feature is scheduled for release in the spring of 1998.

Effects Register Recall Menu

This feature provides a shot box that can be programmed with 24 effects. Each effect can be instantly recalled and run from the BKDM-3010 control panel, or from the user-supplied mouse.

Input Source Control

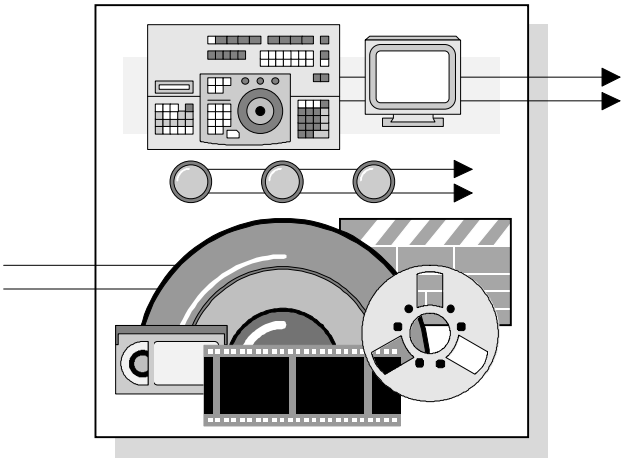
Input source control is the ability to change images on a keyframe-by-keyframe basis or on an edge switch. DME-3000 and DME-7000 can provide input source control through a variety of methods, for example, an internal A/B switch may be utilized. In addition, control is provided for input source selection from switcher AUX buses, or dedicated input routers (such as the DVS-V1201 or BVS-V1201).

An additional feature is the ability to hold (prevent the switch) of the input source on a keyframe-by-keyframe basis.

Note that input source selection for external video sources can only be performed from a switcher AUX bus.

Configuration Guide

DME-3000/7000 Configuration



This chapter provides itemized descriptions of DME-3000 and DME-7000 features, configurations, and options. To assist with pre-sales planning and to simplify the ordering process, two quotation request forms (one for each product) are included.

The following sections are provided:

- Product Differentiation
- Configurations and Features
- DME-series Components
- Basics
- Software and Manuals
- Control Panels and Monitors
- Input Boards
- Effects Boards
- Peripherals
- Training
- Order Guides
- DME Modification Kit

Product Differentiation

The following table lists the primary feature differences between the DME-3000 and the DME-7000.

DME-3000 / DME-7000 Product Differentiation

Category / Feature	DME-3000	DME-7000
Picture Quality		
Primary Input Processing Quantization	10-bits	10-bits
Pixel x Pixel Interpolation	2 x 2	8 x 8
Frame Based Anti Aliasing Filter	Yes	Yes
Pixel Based Anti Aliasing Filter	No	Yes
Effects		
Digital SPARKLE Effects	Yes	Yes
Digital SKETCH Effects	Yes	Yes
Color Grabber	Yes	Yes
Advanced Effects		
3-D Drop Shadow Control	No	Yes
Duality	No	Yes
Color Correction	No	Yes
Metallic Effect	No	Yes
Brick Effect	No	Yes
External Key Border	No	Yes
Glow Effect	No	Yes
Advanced Defocus Filter		
Clean Defocus	No	Yes
Blur/Defocus Mask	No	Yes
Wide Blur	No	Yes
Blur Y/C/K Independent Control	No	Yes
Recursive Effects		
Wind Effect	No	Yes
Trail Defocus	No	Yes
Stardust Size/Aspect Control	No	Yes
Rainbow Color Trail	No	Yes
Target Spot Lighting	No	Yes
Operation		
Full Keyframe Control from Editor *	Partial	Yes
DME-LINK (DME-Wipe)	Yes	Yes
Peripheral-II Interface	Yes	Yes
User-DME	No	Yes
Snapshot	No	Yes
Control / Combine Channel Number	2	4

Note: * Keyframe control from an editor is available on the BVE-9100 equipped with the BKE-9402 option, or on the BVE-9100 Plus.

Configurations and Features

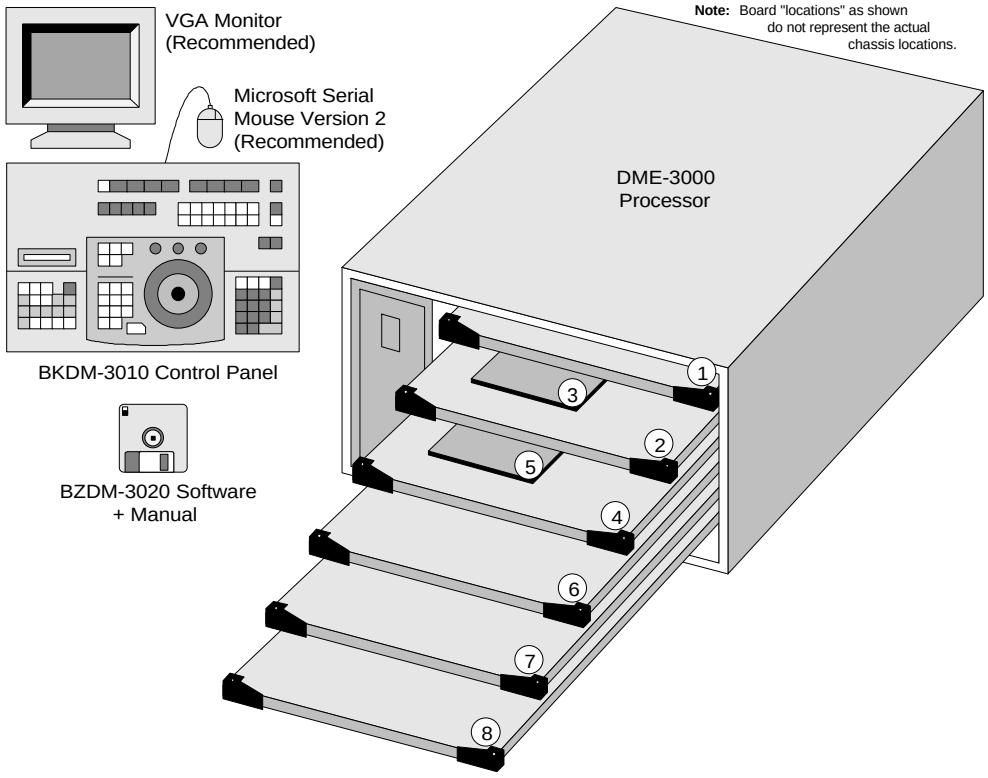
This section includes two "**Configuration and Feature**" areas for both the DME-3000 and DME-7000 products, and one common "**DME Components**" section.

Please note the following important points:

- Each "**Product Configuration**" section provides an illustration of a fully-configured DME system.
- Each "**Features per Board**" section provides a comprehensive chart of the optional boards that are required to obtain specific DME features. Please note:
  - Features are listed in alphabetical order within each category.
  - An "**X**" denotes that the board is required for the specific feature.
  - The functionality of most features is divided between several boards. Eliminating an optional board typically affects the availability of more than one feature.
- In the "DME Components" section, a component-by-component list is provided of the standard and optional items that comprise each product. All items are common to both products except where noted.

DME-3000 Product Configuration

The diagram below represents a fully-configured DME-3000 system.



DME-3000 System Configuration

Standard Components

1. CPU Board, Video Processing Board
   3-D Linear Address Board, Mother Board

Option Boards

2. BKDM-3030 Non-Linear Effects Board
3. BKDM-7031 (Piggyback) Digital SPARKLE Effects Board
4. BKDM-3040 Wipe / Graphics
5. BKDM-7041 (Piggyback) Digital SKETCH Effects Board
6. BKDM-3050 Combiner / Lighting Effects Board
7. BKDM-3060 Key Channel / Recursive Effects Board
8. BKDM-3020 Digital (4*fsc*) Composite I/O Board
   BKDM-3021 Digital (4:2:2) Component I/O Board
   BKDM-3022 Digital (4*fsc*), and Analog Composite I/O Board
   BKDM-3023 Digital (4:2:2), and Analog Component I/O Board
   BKDM-7020 Digital (4:2:2 or 4*fsc*), switchable I/O Board

   Note: customer may purchase multiple I/O boards, but only one board can be installed at a time.

DME-3000 Features per Board

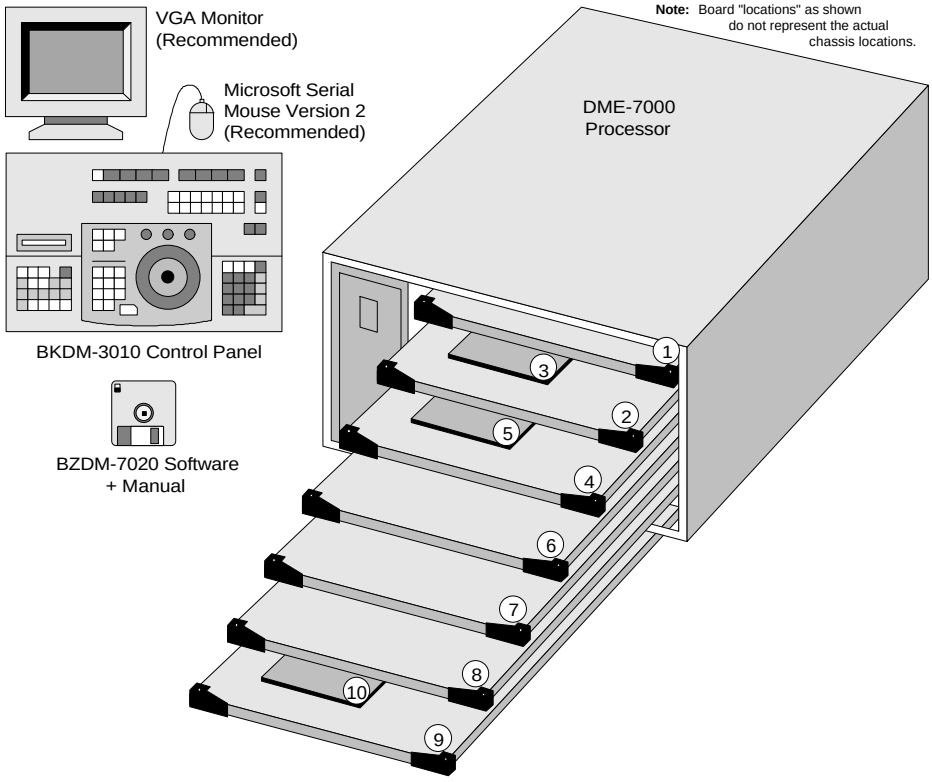
The chart below lists the boards that are required for specific DME-3000 features.

DME-3000 Features per Optional Board Configurations

Category / Feature	DME-3000 + BKDM-3010 + BZDM-3020 Required Optional Board (BKDM-):							
	302x	7020	3030	7031	3040	7041	3050	3060
Picture Quality								
10-bit Input Video and Key Signal Processing	X	X						
Frame-based interpolation	X	X						
Improved Overlap Non-linear Edge Quality	X	X	X		X		X	
Basic Video Effects								
Border, Crop	X	X						
Combine	X	X			X		X	
Dim, Fade	X	X			X		X	
Posterization, Mosaic, Sepia Color	X	X						
Wipe Crop	X	X			X			X
Advanced Effects								
3D Linear Transform	X	X						
Color Grabber	X	X			X	X		
Color Mix	X	X			X			
Digital SKETCH Effects	X	X			X	X		
Digital SPARKLE Effects	X	X	X	X				
Graphics	X	X			X			X
Non-Linear Effects	X	X	X					
Video Defocus	X	X						
External Video on back of Page Turn	3021/3023	X	X		X		X	X
External Video on Border Edge	3021/3023	X	X		X		X	X
4*fsc* or 4:2:2 Digital Input Capability		X						
Shadow and Lighting Effects								
Drop Shadow (Linear)	X	X						
Drop Shadow (Non-overlap, Non-linear)	X	X	X					
Drop Shadow (Overlap, Non-linear)	X	X	X					X
Lighting (Bar, Flat)	X	X			X		X	
Lighting (Bar, Flat, Circle)	X	X	X		X		X	
Spot Lighting / Target Spot Light	X	X			X			
Key and Recursive Effects								
External Key	X	X						X
Key Defocus	X	X						X
Page turn using External Key	X	X	X		X		X	X
Recursive Effects	X	X						X

DME-7000 Product Configuration

The diagram below represents a fully-configured DME-7000 system.



DME-7000 System Configuration

Standard Components

1. CPU Board, High Quality Video Processing Board
   3-D Linear Address Board, Mother Board

Option Boards

2. BKDM-3030 Non-Linear Effects Board
3. BKDM-7031 (Piggyback) Digital SPARKLE Effects Board
4. BKDM-3040 Wipe / Graphics
5. BKDM-7041 (Piggyback) Digital SKETCH Effects Board
6. BKDM-3050 Combiner / Lighting Effects Board
7. BKDM-7060 Key Channel / Recursive Effects Board
8. BKDM-7070 Advanced Shadow Effects Board
9. BKDM-3020 Digital (4*fsc*) Composite I/O Board
   BKDM-3021 Digital (4:2:2) Component I/O Board
   BKDM-3022 Digital (4*fsc*), and Analog Composite I/O Board
   BKDM-3023 Digital (4:2:2), and Analog Component I/O Board
   BKDM-7020 Digital (4:2:2 or 4*fsc*), switchable I/O Board

   Note: customer may purchase multiple I/O boards, but only one board can be installed at a time.
10. BKDM-7021 CCR (Piggyback)

DME-7000 Features per Board

The chart below lists the boards that are required for specific DME-7000 features.

DME-7000 Features per Optional Board Configurations

Category / Features	DME-7000 + BKDM-3010 + BZDM-7020 Required Optional Board (BKDM-):										
	302x	7020	7021	3030	7031	3040	7041	3050	3060	7060	7070
Picture Quality											
10-bit Input Video and Key Signal Processing	X										
Frame-based interpolation	X										
Improved Overlap Non-linear Edge Quality	X			X				X			
Multi-Point Interpolation	X										
Pixel Anti-Aliasing Filter	X										X
Basic Video Effects											
Border, Crop	X										
Combine	X							X			
Dim, Fade	X							X			
Posterization, Mosaic, Sepia Color	X										
Wipe Crop	X					X			X	X	
Advanced Effects											
Brick Effect	X									X	X
3D Linear Transform	X										
Color Grabber	X					X	X				
Color Mix	X					X					
Digital SKETCH Effects	X					X	X				
Digital SPARKLE Effects	X			X	X						
Graphics	X					X			X	X	
Non-Linear Effects	X			X							
Video Defocus	X										
External Video on back of Page Turn	3021/ 3023	X		X		X		X	X	X	
External Video on Border Edge	3021/ 3023	X		X		X		X	X	X	
4*fsc* or 4:2:2 Digital Input Capability		X									
Video Defocus Mach Noise Cancel	X										
Video Blur Masking	X					X					
Duality	3021/ 3023	X		X		X		X		X	X
Duality “Sub” Channel Video Effects		X	X								
Duality “Sub” Channel Bevel Edge		X	X								
Color Correction		X	X								
Metallic Effects		X	X								
Assignable Frame Store (Utility)		X									

DME-7000 Features per Optional Board Configurations (continued)

Category / Features	DME-7000 + BKDM-3010 + BZDM-7020 Required Optional Board (BKDM-):										
	302x	7020	7021	3030	7031	3040	7041	3050	3060	7060	7070
Shadow and Lighting Effects											
3-D Drop Shadow (Linear)	X									X	X
Drop Shadow (Linear)	X										
Drop Shadow (Non-overlap, Non-linear)	X			X							
Drop Shadow (Overlap, Non-linear)	X			X					X	X	
Glow Effect	X									X	X
Lighting (Bar, Flat)	X							X			
Lighting (Bar, Flat, Circle)	X			X				X			
Spot Lighting / Target Spot Light	X					X					
Target Lighting	X					X		X	X	X	
Key and Recursive Effects											
External Key	X								X	X	
Key Border	X									X	X
Key Defocus	X								X	X	
Page Turn using External Key	X			X				X	X	X	
Random, Rainbow Color Trail	X									X	
Recursive Effects	X								X	X	
Wind Effects, Dust Modify	X									X	

DME-Series Components

The following sections describe the standard and optional components that comprise the DME-3000 and DME-7000 systems. Five sections are included:

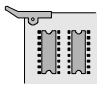
- Basics
- Software and Manuals
- Control Panels and Monitors
- Input Boards
- Effects Boards
- Peripherals

All items are common to both products except where noted.

Basics

This section describes the basic hardware and software components that comprise a DME-3000 or DME-7000 system.

DME-3000 Processor (DME-3000)



(DME-3000 only)

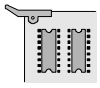
The **DME-3000 Processor** houses the main electronics, communication ports, all input/output connectors, CPU Board, Video Processing Board, 3D Linear Address Board, and Mother Board. Please note:

- The Operation Software **BZDM-3020** or **BZDM-3720** is required.
- The DME-3000 system supports up to 2 channels. For a second channel, order a second DME-3000 processor.

In the "**Installation Guide**" chapter, refer to the "**DME-3000/7000 Chassis**" section for a chassis diagram and list of chassis specifications.

Note that RS-422 interconnect cables are *not* provided. In the "**Peripherals**" section, see the "**System Cables**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

DME-7000 Processor (DME-7000)



(DME-7000 only)

The **DME-7000 Processor** houses the main electronics, communication ports, all input/output connectors, CPU Board, High Quality Video Processing Board, 3D Linear Address Board, and Mother Board. Please note:

- The Operation Software **BZDM-7020** or **BZDM-7720** is required.
- The DME-7000 system supports up to 4 channels, two of which may be DME-3000 processors. For a second, third, or fourth channel, order the desired number of DME-3000 or DME-7000 processors.

In the "**Installation Guide**" chapter, refer to the "**DME-3000/7000 Chassis**" section for a chassis diagram and list of chassis specifications.

Note that RS-422 interconnect cables are *not* provided. In the "**Peripherals**" section, see the "**System Cables**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

Software and Manuals

This section describes the software and manuals that are available for the DME-3000 and DME-7000 systems.

BZDM-3020 Operation Software and Manual (DME-3000)

(DME-3000 only)

The **BZDM-3020 Operation Software and Manual** (English) is required for operation with the **BKDM-3010** control panel, and for driving the DME-3000's logical array of menus. The software is provided on floppy disk for insertion in the Control Panel's floppy drive.

BZDM-3720 Operation Software and Manual (DME-3000)

(DME-3000 only)

The **BZDM-3720 Operation Software and Manual** (English) is required for operating the **BKDS-7030** and **BKDS-7031** sub-panels (which are options to the DVS-7000 series switchers). See the "**Switcher Control Panel Configuration**" section below for important information.

BZDM-7020 Operation Software and Manual (DME-7000)

(DME-7000 only)

The **BZDM-7020 Operation Software and Manual** (English) is required for operation with the **BKDM-3010** control panel, and for driving the DME-7000's logical array of menus. The software is provided on floppy disk for insertion in the Control Panel's floppy drive. Note that the software includes the **CH3** and **CH4** buttons for the **BKDM-3010** control panel.

BZDM-7720 Operation Software and Manual (DME-7000)

(DME-7000 only)

The **BZDM-7720 Operation Software and Manual** (English) is required for operating the **BKDS-7030** and **BKDS-7031** sub-panels (which are options to the DVS-7000 series switchers). See "**Switcher Control Panel Configuration**" below.

Switcher Control Panel Configuration

Note the following important points regarding the installation configurations with the **BKDS-7030** and **BKDS-7031** sub-panels:

- The **BKDS-7030** and **BKDS-7031** sub-panels are sold as a set.
- When installed, the **BKDS-7030** and **BKDS-7031** sub-panels do not require the **BKDM-3010** control panel (and its associated software). However, the **BKDM-3010** may be included in the configuration for greater flexibility at the facility.
- When the **BZDM-3720** operation software is installed to control the DME-3000, the **BZDM-3020** software is not required — whether or not a **BKDM-3010** panel is included in the system configuration.
- When the **BZDM-7720** operation software is installed to control the DME-7000, the **BZDM-7020** software is not required — whether or not a **BKDM-3010** panel is included in the system configuration.

Control Panels and Monitors

This section describes the DME-series control panel and monitor options. Note that a Status Monitor is highly recommended.

BKDM-3010 Control Panel

The **BKDM-3010 Control Panel** works with both the DME-3000 and DME-7000 systems. It includes an integral floppy disk, and can control the following channels:

- Up to 2 channels of DME-3000 processors
- Up to 4 channels of DME-7000 processors

One (1) 25-pin D-sub cable, 10 meters (P/N **1696-660-11**) is supplied for connection between Chassis and Control Panel. The cable supplies power to the Processor. For longer lengths (for RS-422 9-pin control), use the **DME-3000BOX**.

BKDS-7030 Key Frame Control Panel for DVS-7000 Series

The **BKDS-7030** Key Frame Control Panel (with mounting hardware and interconnect cables) is a "sub-panel" that installs in the DVS-7000 series switcher panel. It provides keyframe timeline control for single and multi-channel DME-series systems. The **BZDM-3720** software is required to operate the DME-3000; the **BZDM-7720** software is required to operate the DME-7000. See the "**Switcher Control Panel Configuration**" section for details.

BKDS-7031 DME Control Panel for DVS-7000 Series

The **BKDS-7031** DME Control Panel (with mounting hardware and interconnect cables) is a sub-panel that installs in the DVS-7000 series switcher panel. It allows direct control of both single and multi-channel DME-series systems. The **BZDM-3720** software is required to operate the DME-3000; the **BZDM-7720** software is required to operate the DME-7000. See the "**Switcher Control Panel Configuration**" section for important information.

Status Monitor

A variety of SVGA status display monitors are available from Sony, such as the model **CPD-15SF2** and the LCD display model **LMD-1041**. Due to the continuing improvement in monitor technology and the wide range of choices available for specific applications, refer to your Sony catalog or contact your Sony sales office for details on the current models available.

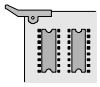
Note that the status monitor connects to the **BKDM-3010** control panel.

Input Boards

This section describes the optional input boards that can be added to a DME-3000 or DME-7000 system. Please note:

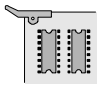
- Each input board is compatible with both systems.
- One input board is required for proper DME operation.
- Only one input board can be installed in the selected processor at a time. However, multiple input boards can be purchased.

BKDM-3020 Digital Composite Input/Output Board



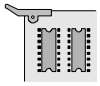
The BKDM-3020 Digital Composite (4*fsc*) Input/Output Board provides two (A and B) composite serial digital inputs and two composite serial digital outputs.

BKDM-3021 Digital Component Input/Output Board



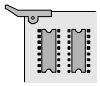
The BKDM-3021 Digital Component (4:2:2) Input/Output Board provides two (A and B) component serial digital inputs and two component serial digital outputs.

BKDM-3022 Digital/Analog Composite Input/Output Board



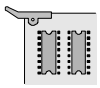
The BKDM-3022 Digital (4*fsc*) and Analog Composite Input/Output Board provides two (A and B) composite serial digital inputs, two (A and B) composite analog inputs, two composite serial digital outputs, and two composite analog outputs.

BKDM-3023 Digital/Analog Component Input/Output Board



The BKDM-3023 Digital (4:2:2) and Analog Component Input/Output Board provides two (A and B) component serial digital inputs, two (A and B) component analog inputs, two component serial digital outputs, and two component analog outputs.

BKDM-7020 Digital Input/Output Board



The BKDM-7020 Digital Input/Output Board provides two (A and B) serial digital inputs for video and key signals, plus a single external video input. The board can be used for Composite (4*fsc*) or Component (4:2:2) signals, with all configuration performed from the GUI. An assignable frame store on the board itself can capture input or output images for use as a background.

Effects Boards

This section describes the optional effects boards that can be added to a DME-3000 or DME-7000 system. Refer to the "**DME-3000 Features per Board**" and "**DME-7000 Features per Board**" sections for detailed lists of the boards that are required for specific DME-3000 and DME-7000 features.

BKDM-3030 Non-Linear Effects Board

The BKDM-3030 Non-Linear Effects Board provides non-overlap effects (such as Wave, Ripple, Flag, and Broken Glass) and overlap effects (such as Page Turn, Roll, Cylinder, and Sphere).

Note that the **BKDM-3050** Combiner/Lighting Board is required to improve the edge-quality.

BKDM-7031 Digital SPARKLE™ Effects Board

The BKDM-7031 Digital SPARKLE Effects Board is a "Piggyback" that installs on the BKDM-3030 Board. Effects such as Pixel Explosion, Melt, Multi-Mirror, Twist, Kaleidoscope and Blind are provided.

BKDM-3040 Wipe/Graphics Board

The BKDM-3040 Wipe/Graphics Board provides wipe pattern-related effects such as the Wipe Crop. Patterns include vertical, horizontal, slant, rectangular, circle, star, and heart. The color mix generator and additional graphic functions are also included, such as XYZ-axis numeric positional data, grid lines, and "off-screen" location mode. Graphics are inserted on the DME's video output.

Note that the **BKDM-3060** (for DME-3000) or **BKDM-7060** (for DME-7000) is required to obtain the graphic display.

BKDM-7041 Digital SKETCH™ Effects Board

The BKDM-7041 Digital SKETCH Effects Board is a "Piggyback" that installs on the BKDM-3040 Board. Effects such as Digital SKETCH, Enhanced Edge, Drawing, Relief, Beveled Edge, and Color Grabber are provided.

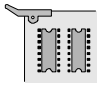
BKDM-3050 Combiner/Lighting Board

The BKDM-3050 Combiner/Lighting Board provides the combiner electronics which are required for multi-channel operation. In addition, lighting effects such as Flat, Bar, Circle, Size, Position, Color, and Shading are provided.

Note that the **BKDM-3040** Graphics Board provides additional shapes, and the **BKDM-3030** Non-Linear Effects Board provides the Circle light pattern.

BKDM-3060 BKDM-7060 Key Channel/Recursive Effects Board

(BKDM-3060: DME-3000 only)
(BKDM-7060: DME-7000 only)



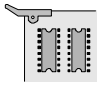
The BKDM-3060/7060 Key Channel/Recursive Effects Board provides the input electronics for an external key signal, for example, from a character generator. The signal is routed to the main processing electronics, allowing both the input video and external key signal to be manipulated. The board also provides the pattern key for the Wipe Crop feature, Key Defocus, and Rainbow Color Trail effects.

The **BKDM-3040** Graphics Board is required to obtain the pattern key for the wipe crop and the graphics display.

For the DME-7000 only, when the **BKDM-7070** board is added, effects such as Trail, 3-D Drop Shadow, Brick, External Key Border, and Glow are provided.

BKDM-7070 Advanced Shadow™ Effects Board

(DME-7000 only)

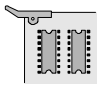


The BKDM-7070 Advanced Shadow Effects Board provides advanced shadow effects. When the **BKDM-7060** board is added, additional advanced effects such as 3-D Drop Shadow (with Size, Perspective, Defocus and Fade), Brick, External Key Border, and the Glow effect are provided.

Note that pixel-based anti-alias filtering capability is enabled with this board.

BKDM-7021 Digital Color Effects Board

(DME-7000 only)



The BKDM-7021 Digital Color Effects Board is a “Piggyback” that installs onto the BKDM-7020. This board provides a color correction processor that may be applied to primary or external video. Additional video effects for the Duality mode “sub” channel are also provided with the BKDM-7021. Sub channel effects include beveled edge, posterize, solarize, sepia, and monochrome.

Peripherals

This section describes the peripheral products that can be added to a DME-3000 or DME-7000 system.

RCC-5G, 10G, 30G — System Cables

The RCC-series cables provide RS-422 9-pin interconnects for serial controlled devices. Three lengths are available:

- RCC-5G, 5 meters
- RCC-10G, 10 meters
- RCC-30G, 30 meters

RCC cables are required to connect the chassis to other RS-422 devices. Note that some devices include RS-422 cables as standard.

RMM-30 — Rack Mount Kit

The RMM-30 Rack Mount Kit allows the DME-3000 or DME-7000 to be rack-mounted in a standard 19" rack.

DME-3000BOX — Converter Box

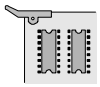
For control panel cable lengths over 10 meters, the DME-3000BOX converts 25-pin control to RS-422 9-pin control. The converter box requires the model **AC-550** Power Supply, and the 25-pin cable supplied with the BKDM-3010 control panel.

BVS-V1201 — Analog Signal Input Source Router

The BVS-V1201 Analog Signal Input Source Router accepts 12 video inputs and provides one video output. Up to two units can be used for input source selection of primary video and key signals. Input source control is the ability to change images on a keyframe-by-keyframe basis or on an edge switch. Source selection may be performed from the control panel included with the BVS-V1201, or you can use the DME's GUI menu. An RS-422 connection is required between the BVS-V1201 and the DME chassis.

Note that RS-422 interconnect cables are *not* provided. See the "**System Cables**" heading above for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

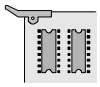
DVS-V1201 Digital Signal Input Source Router



The DVS-V1201 Digital Signal Input Source Router accepts 12 video inputs and provides one video output. Up to two units can be used for input source selection of primary video and key signals. Input source control is the ability to change images on a keyframe-by-keyframe basis or on an edge switch. Source selection may be performed from the control panel included with the DVS-V1201, or you can use the DME's GUI menu. An RS-422 connection is required between the DVS-V1201 and the DME chassis.

Note that RS-422 interconnect cables are *not* provided. See the "**System Cables**" heading above for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

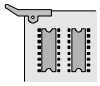
Microsoft Serial Mouse Version 2



(User-supplied)

A Microsoft serial mouse version 2 or Microsoft compatible serial mouse is highly recommended.

Spare Parts



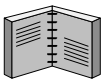
When ordering replaceable parts such as printed circuit boards and major components, use the following names and part numbers:

- CPU-114 Board, p/n **A-8275-400-A** (DME-3000)
- CPU-196 Board, p/n **A-8272-261-A** (DME-7000)
- DPR-35 Board, p/n **A-8275-401-A** (DME-3000)
- DPR-70 Board, p/n **A-8272-263-A** (DME-7000)
- MPU-70 Board, p/n **A-8275-402-A**
- Power Assembly, p/n **A-8267-803-A**
- EX-394 Extender Board, p/n **J-6188-100-A**

Training

This section describes training courses that are available for the DME-3000 and DME-7000 systems.

NN-TRNG/GEN1C Training — General Product



This class provides one day (8 hours) of general BVE, DVS, or DME training at the customers location. The class is limited to 3 students, and is a pre-requisite for any additional DME training. Additional training can be arranged by your local Sony Account Manager, or your regional Product Specialist.

Note: Includes instructor travel and accommodations.

Order Guides

Fax Cover

To: _____

Fax #: _____

From: _____

Date: _____

Pages: _____

Message: _____

_____

_____

Customer Information

Company Name: _____

Address: _____

_____

Phone: _____

Fax: _____

Contact: _____

Title: _____

Instructions

Two **Request Forms** are provided on the following pages — one for DME-3000 and one for DME-7000. Each form includes a table of all basic and optional DME components. Use the appropriate table to configure the customer's optimum system.

Please perform the following steps:

- As a prerequisite, review the information in the "**Installation Guide**" chapter.
- Complete the customer information section above.
- In the tables, check off the basic and optional items required. Note that *recommended* items are marked with an **X** in the "**Rec**" column.
  - You must order *all* recommended basics. For multi-channel operations, order additional processors as required up to the maximum 2 (for DME-3000) or 4 (for DME-7000).
  - Select the desired control panel and software configuration.
  - Order one (or more) input boards in the desired format(s), as required.
  - Order the desired number of optional effects boards and the desired number of peripherals.
- Mark quantities (where appropriate), exceptions, and comments in the "**Notes**" column.
- Send the completed forms to your local Sony Sales Representative to receive a detailed DME system proposal. Refer to "**Appendix C. Sales and Service**" for a list of Sony Regional Sales Offices.
- For submitting the completed proposal, the area at the top of this page can be used as a convenient fax cover sheet.

DME-3000 Request Form

DME-3000 System Components

Part #	Description	Rec	√	Notes
Basics				
DME-3000	Digital Multi Effects Processor	X		Supports 2 Channels
BZDM-3020	Operation Software with Manual (English)	X		Essential to initiate DME-3000 system
Control Panels				
BKDM-3010	DME Control Panel	X		
BKDS-7030	Key Frame Control Panel			Sold as a set with BKDS-7031
BKDS-7031	DME Control Panel			Sold as a set with BKDS-7030
BZDM-3720	Operation Software and Manual			BZDM-3020 not required
Input Boards (pick one per channel)				
BKDM-3020	Digital Composite Input/Output Board	X		525/60 only — Discontinued 1997. Use BKDM-7020
BKDM-3021	Digital Component Input/Output Board	X		Discontinued 1997. Use BKDM-7020
BKDM-3022	Digital/Analog Composite Input/Output Board	X		525/60 only
BKDM-3023	Digital/Analog Component Input/Output Board	X		
BKDM-7020	Digital Input/Output Board	X		4*fsc* or 4:2:2 switchable
Effects Boards				
BKDM-3030	Non-linear Effects Board	X		
BKDM-7031	Digital SPARKLE Effects Board			
BKDM-3040	Wipe and Graphics Board	X		
BKDM-7041	Digital SKETCH Effects Board			
BKDM-3050	Combiner and Lighting Board	X		
BKDM-3060	Key Channel and Recursive Effects Board	X		
Peripherals				
	SVGA Monitor	X		Refer to the "Edit Status Monitor" section in this guide for instructions
RCC-5G RCC-10G RCC-30G	5 meter RS-422 cable 10 meters RS-422 cable 30 meters RS-422 cable	User select		Select one per RS-422 control device interface
RMM-30	Rack Mount Kit			
DME-3000BOX	Converter Box — Converts 25-pin to 9-pin control			Requires AC-550 Power Supply
AC-550	Power Supply			Works with DME-3000BOX
BVS-V1201	Analog Input Source Router			Use 2 units for video and key
DVS-V1201	Digital Input Source Router			Use 2 units for video and key
A-8275-400-A	Spare Parts: CPU-114 Board			
A-8275-401-A	Spare Parts: DPR-35 Board			
A-8275-402-A	Spare Parts: MPU-70 Board			
A-8267-803-A	Spare Parts: Power Assembly			
J-6188-100-A	Spare Parts: EX-394 Extender Board			
Training				
NN-TRNG/GEN1C	1 day general BVE, DVS, or DME training at the customers location. Class limited to 3 students.	X		Includes instructor travel and accommodations.

DME-7000 Request Form

DME-7000 System Components

Part #	Description	Rec	√	Notes
Basics				
DME-7000	Digital Multi Effects	X		Supports 4 Channels
BZDM-7020	Operation Software with Manual (English)	X		Essential to initiate DME-7000 system
Control Panels				
BKDM-3010	DME Control Panel	X		
BKDS-7030	Key Frame Control Panel			Sold as a set with BKDS-7031
BKDS-7031	DME Control Panel			Sold as a set with BKDS-7030
BZDM-7720	Operation Software and Manual			BZDM-7020 not required
Input Boards (pick one per channel)				
BKDM-3020	Digital Composite Input/Output Board	X		525/60 only
BKDM-3021	Digital Component Input/Output Board	X		
BKDM-3022	Digital/Analog Composite Input/Output Board	X		525/60 only
BKDM-3023	Digital/Analog Component Input/Output Board	X		
BKDM-7020	Digital Input/Output Board	X		4*fsc* or 4:2:2 switchable
Effects Boards				
BKDM-3030	Non-linear Effects Board	X		
BKDM-7031	Digital SPARKLE Effects Board			
BKDM-3040	Wipe and Graphics Board	X		
BKDM-7041	Digital SKETCH Effects Board			
BKDM-3050	Combiner and Lighting Board	X		
BKDM-7060	Key Channel and Recursive Effects Board	X		
BKDM-7070	Advanced Shadow Effects Board	X		
BKDM-7021	Digital Color Effects (CCR) Board			
Peripherals				
	SVGA Monitor	X		Refer to the “Edit Status Monitor” section in this guide for instructions
RCC-5G RCC-10G RCC-30G	5 meter RS-422 cable 10 meters RS-422 cable 30 meters RS-422 cable	User select		Select one per RS-422 control device interface
RMM-30	Rack Mount Kit			
DME-3000BOX	Converter Box — Converts 25-pin to 9-pin control			Requires AC-550 Power Supply
AC-550	Power Supply			Works with DME-3000BOX
BVS-V1201	Analog Input Source Router			Use 2 units for video and key
DVS-V1201	Digital Input Source Router			Use 2 units for video and key
A-8272-261-A	Spare Parts: CPU-196 Board			
A-8272-263-A	Spare Parts: DPR-70 Board			
A-8275-402-A	Spare Parts: MPU-70 Board			
A-8267-803-A	Spare Parts: Power Assembly			
J-6188-100-A	Spare Parts: EX-394 Extender Board			
Training				
NN-TRNG/GEN1C	1 day general BVE, DVS, or DME training at the customers location. Class limited to 3 students.	X		Includes instructor travel and accommodations.

DME Modification Kit

This section describes the kit that is used to convert a DME-3000 to a DME-7000.

BKDM-3000K1 DME Modification Kit

The BKDM-3000K1 DME Modification Kit provides the necessary hardware and software for converting a DME-3000 to a DME-7000.

Because each DME-3000 system includes a different array of boards and options, each upgrade is essentially a “custom” procedure. To achieve DME-7000 features and picture quality, the upgrade consists of four components: a RISC CPU board, Video Processing Board, Mother Board and Rear Panel assembly. Additional boards may be required for advanced DME-7000 features.

As a prerequisite for upgrading, the customer should be prepared to provide the sales representative with the following “checklist” items:

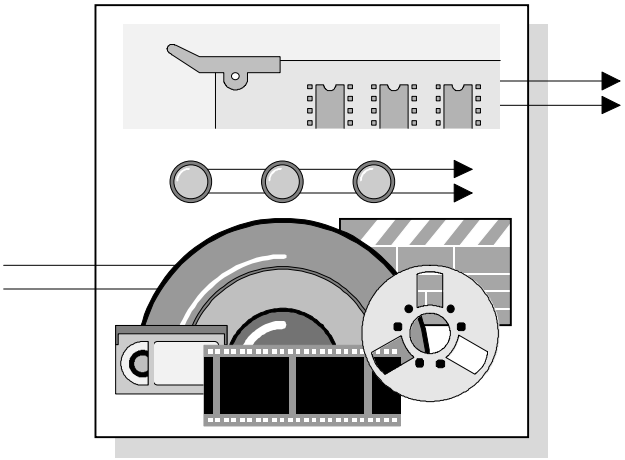
- ☐ Provide DME-3000 serial number.
- ☐ Provide current DME-3000 system configuration, including a list of all input boards and optional effects boards resident in the system.
- ☐ Provide current control panel and operating software configuration.

Please note the following important points:

- The DME-3000’s 3-D Linear Address Board MPU-70 does not need to be upgraded.
- All optional DME-3000 boards except the BKDM-3060 can be used in the upgraded DME-7000 equivalent. The BKDM-7060 is recommended.
- For advanced DME-7000 features, the BKDM-7070 is required.
- Modification on site is not recommended. Modification at the Sony Service Center is recommended, and may be required.
- Refer to the Field Service Upgrade Policy UPG-152 for complete upgrade details and procedures.
- If the customer’s current software and hardware configurations are not available, the customer or sales representative can contact Sony SOFTWAREPLUS℠ for details on the customer’s configuration.
- For further assistance with system expansion and upgrading, please contact your regional Product Specialist.

Installation Guide

DME-3000/7000 Installation



This chapter provides information and diagrams to assist with facility engineering and equipment integration requirements. The following sections are included:

- The "**DME-3000/7000 Control Panel**" section provides detailed control panel diagrams and a table of specifications (dimensions, power, environmental and connectors).
- The "**DME-3000/7000 Chassis**" section provides detailed chassis diagrams and a table of specifications (dimensions, power, environmental and connectors).
- The "**System Timing Requirements**" section provides a comprehensive system phase timing chart and description.
- The "**DME-3000/7000 Chassis Connectors**" section provides comprehensive chassis connector "pinout" tables.
- The "**DME-3000/7000 Control Panel Connectors**" section provides comprehensive control panel connector "pinout" tables.

Three diagrams are also provided at the end of the chapter:

- DME-3000/7000 System Interconnection Chart — Video
- DME-3000/7000 System Interconnection Chart — Control
- DME-3000/7000 Interconnection with DVS-7000 Series

DME-3000/7000 Control Panel

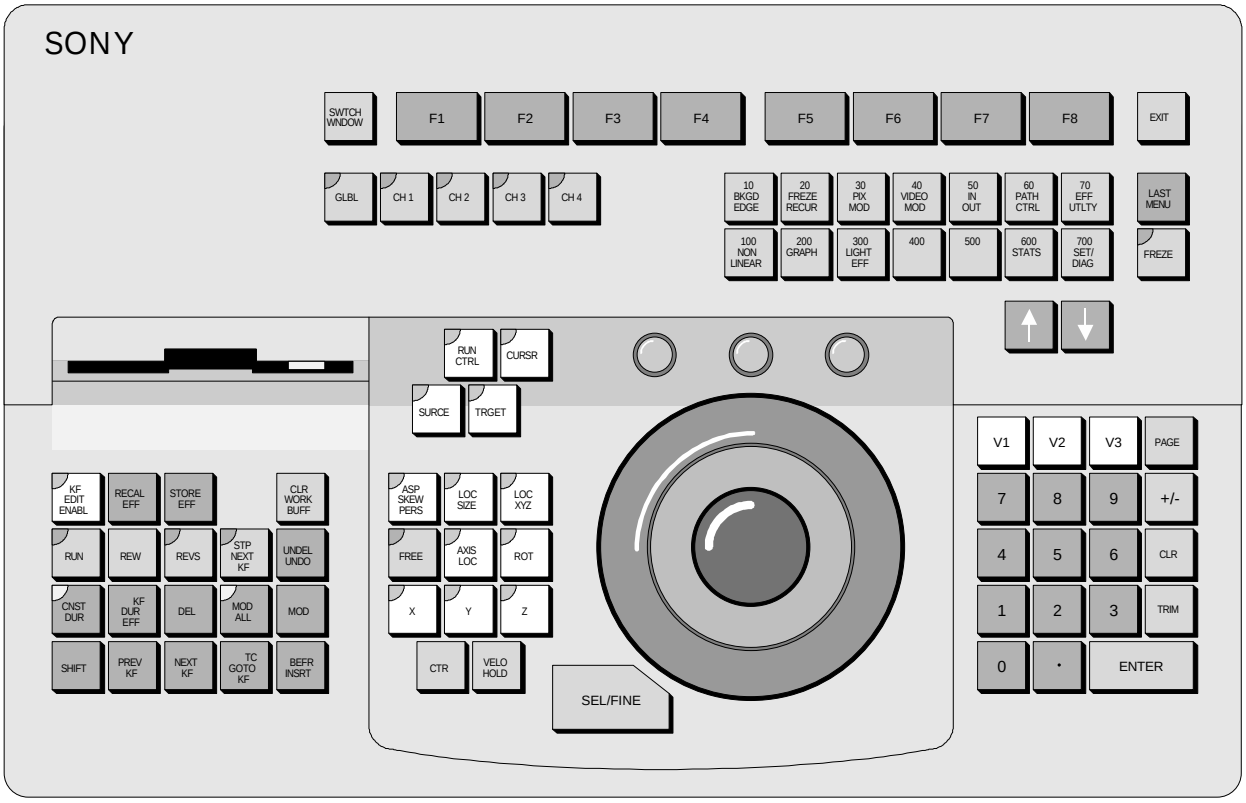
This section includes four areas:

- Control Panel Top View
- Control Panel External Dimensions
- Control Panel Specifications
- Control Panel Rear View

Control Panel Top View

The figure below illustrates the control panel for the DME-3000/7000. The panels are identical, with the following exceptions:

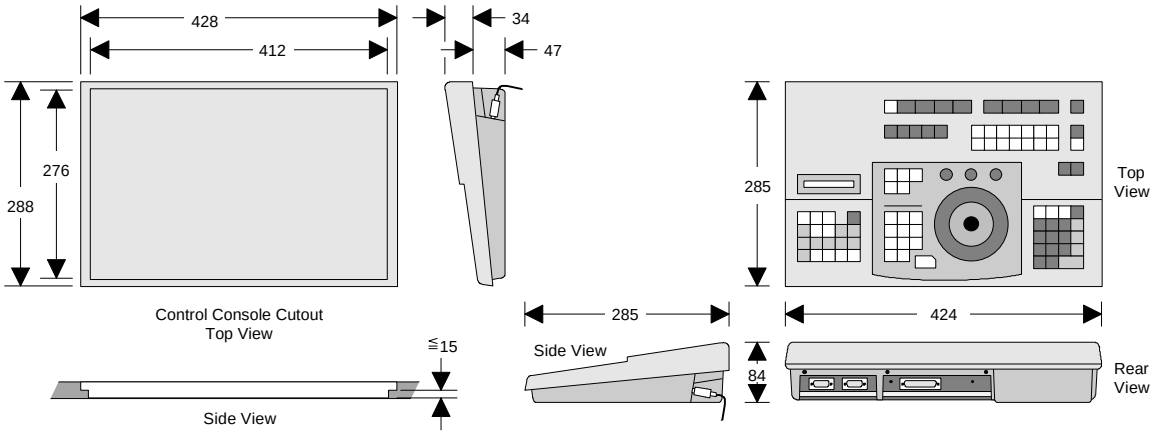
- The DME-3000 panel includes buttons for **CH1**, **CH2**, and **Global**.
- The DME-7000 panel includes buttons for **CH1**, **CH2**, **CH3**, **CH4**, and **Global**. Note that the **CH3** and **CH4** buttons are included with the **BZDM-7020** software.



DME-3000/7000 Control Panel Top View

Control Panel External Dimensions

The figure below illustrates external Control Panel and console cutout dimensions (in millimeters):



DME-3000/7000 External Control Panel and Cutout Dimensions

Control Panel Specifications

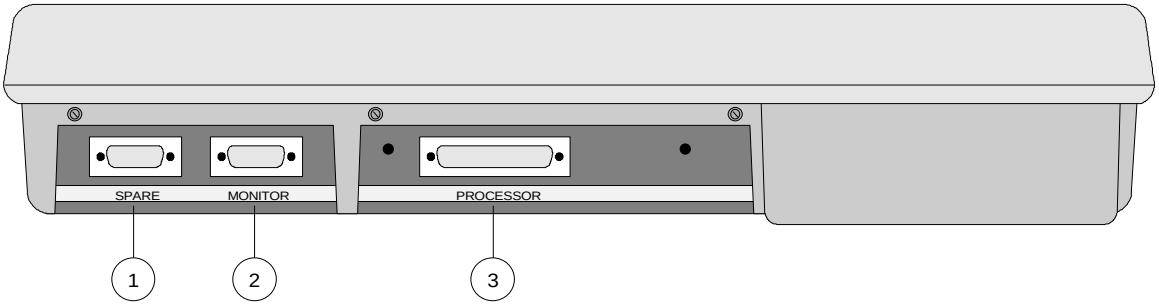
The following table lists specifications for the DME-3000 and DME-7000 control panel. All specifications are identical except where noted.

DME-3000/7000 Control Panel Specifications

Parameter	Specification
Control Panel Dimensions mm:	424 (w) x 84 (h) x 285 (d)
inches:	16.75 (w) x 3.375 (h) x 11.25 (d)
Cutout Dimensions (Outer) mm:	428 (w) x 288 (d)
inches:	16.85 (w) x 11.33 (d)
(Inner) mm:	412 (w) x 15 (h) x 276 (d)
inches:	16.22 (w) x 0.59 (h) x 10.86 (d)
Weight (approximate)	3.5 kg 7 lb. 11 oz.
Temperature Storage: **DME-7000:**	-20° to +60°C
DME-3000:	-20° to +55°C
Operational range:	+5° to +40°C
Power requirement	DC 10 to 15V
Power consumption	12W
Connectors	
Processor	25-pin D-sub connector, female
Monitor	15-pin D-sub connector, female
Spare	9-pin D-sub connector, male

Control Panel Rear View

The figure below illustrates a rear view of the DME-3000/7000 Control Panel.



DME-3000/7000 Control Panel Rear View

Rear Control Panel components are listed below:

1. Spare (D-sub 9-pin), male (for Mouse or ISR)
2. Monitor (D-sub 15-pin) female
3. Processor (D-sub 25-pin) female

DME-3000/7000 Chassis

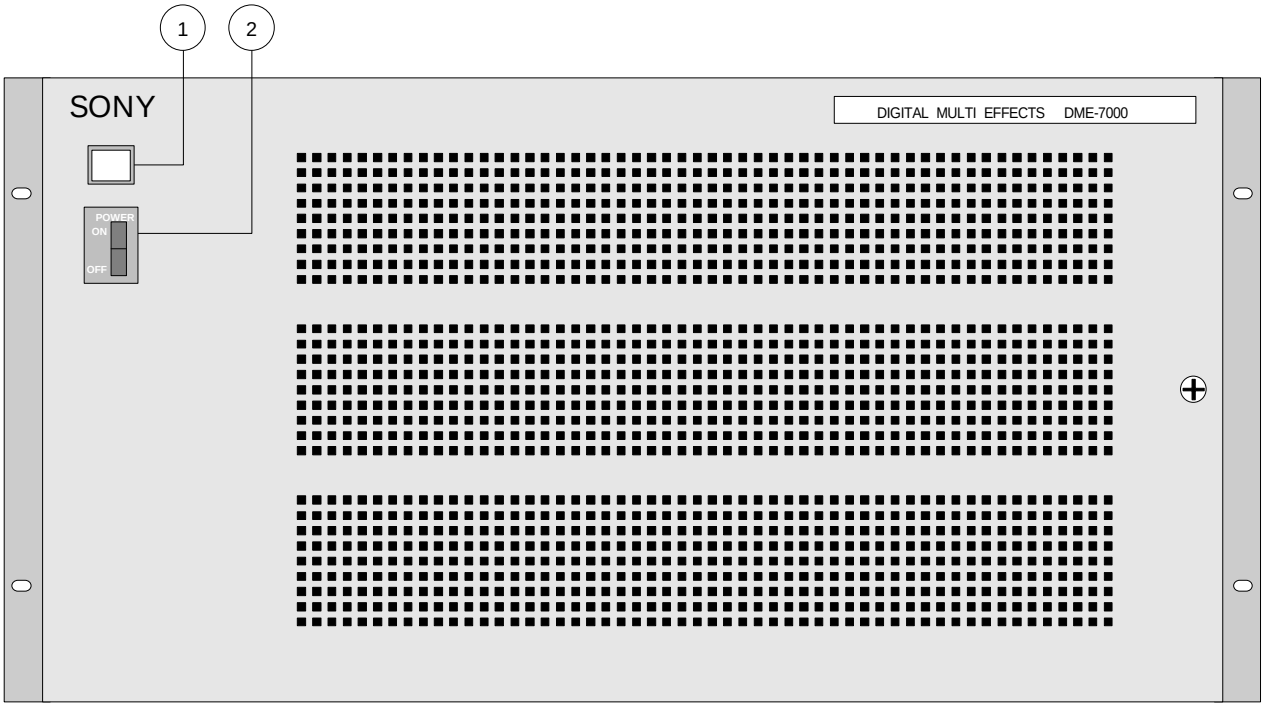
This section includes the following areas:

- Chassis Front View
- Chassis Rear View
- Chassis External Dimensions
- Chassis Specifications
- Video Specifications
- System Timing Requirements

Chassis Front View

The figure below illustrates a front view of the DME-3000/7000 chassis. The chassis front panels are identical, with the following exception:

- The label **DIGITAL MULTI EFFECTS DME-3000** appears on the DME-3000 front panel.
- The label **DIGITAL MULTI EFFECTS DME-7000** appears on the DME-7000 front panel.



DME-3000/7000 Chassis — Front View

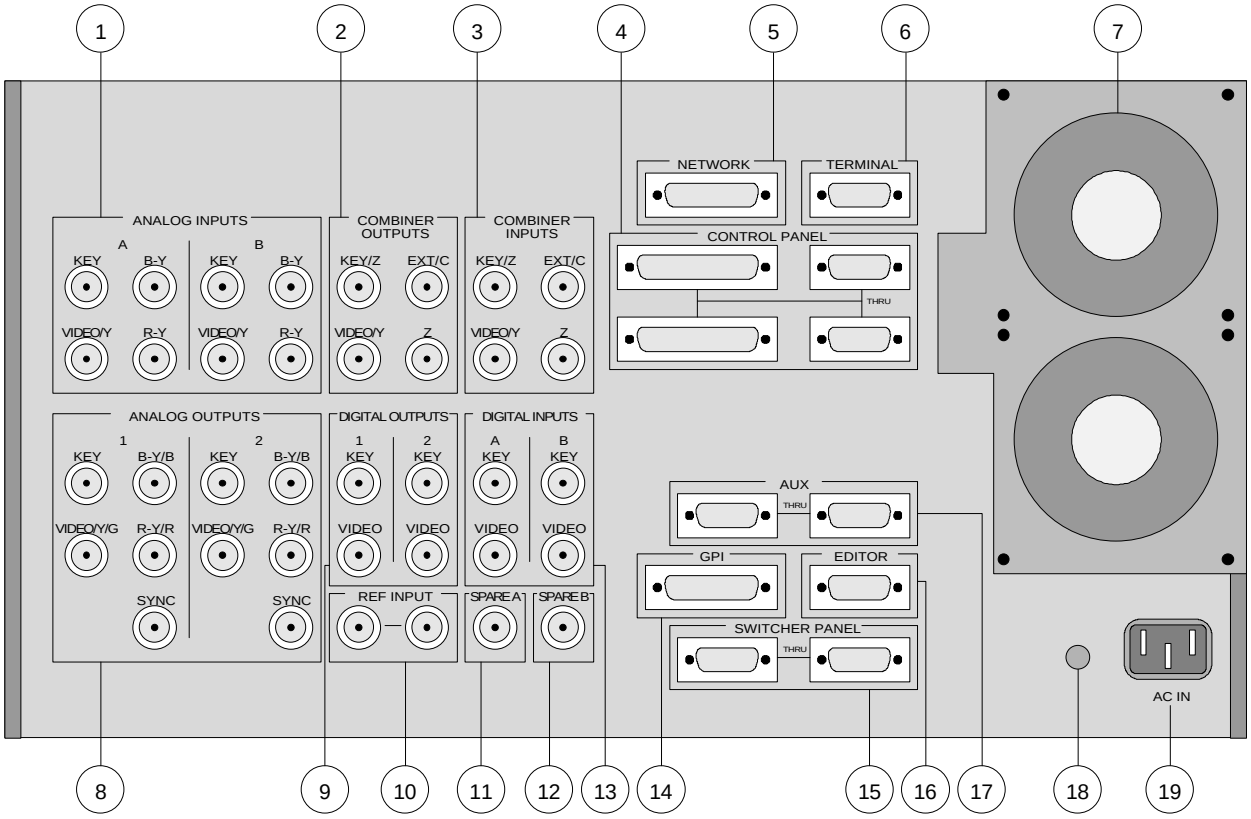
Front chassis components are listed below:

1. Power Indicator
2. Power Switch

Chassis Rear View

The figure below illustrates a rear view of the DME-3000/7000 chassis. The chassis rear panels are identical, with the following exception:

- The DME-7000 rear panel includes a **Network** connector and a **Terminal** connector.



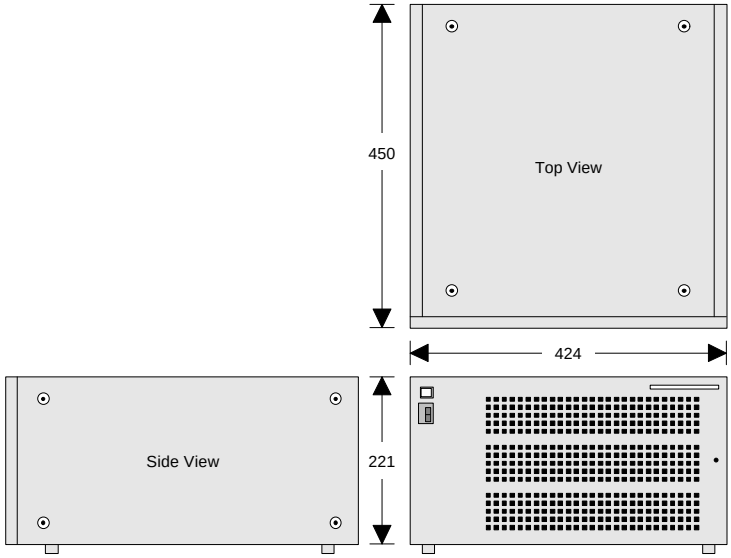
DME-3000/7000 — Rear View

Rear chassis components are listed below:

1. Analog input group (**Note**: BKDM-7020 uses the **ANALOG A VIDEO/Y** connector for external video)
2. Combiner output group
3. Combiner input group
4. Control panel connector group
5. Network connector (DME-7000 only). Not active.
6. Terminal connector (DME-7000 only). Not active.
7. Chassis cooling fans
8. Analog output group
9. Digital input group
10. Reference input group
11. Spare A
12. Spare B
13. Digital output group
14. GPI connector
15. Switcher panel group
16. Editor connector
17. Aux connector group
18. Ground terminal
19. AC In receptacle

Chassis External Dimensions

The figure below illustrates external chassis dimensions (in millimeters):



DME-3000/7000 External Chassis Dimensions

Chassis Specifications

The following table lists specifications for the DME-3000 and DME-7000 chassis. All specifications are identical except where noted.

DME-3000/7000 Chassis Specifications

Parameter		Specification
Dimensions	mm: inches:	424 (w) x 221 (h) x 450 (d) 16.75 (w) x 8.75 (h) x 17.75 (d)
Weight (approximate)	**DME-7000:** **DME-3000:**	27 kg with all option boards installed (59 lb. 8 oz.) 25 kg (55 lb. 2 oz.)
Temperature	Operational range:	+5° to +40°C
Power requirement		AC 90V to 264V, 50/60 Hz
Power consumption	**DME-7000:** **DME-3000:**	400W max. (including all option boards, control panel) 400W
Connectors		
Control panel		9-pin D-sub, loop-through, RS-422A 25-pin D-sub, loop-through, RS-422A
Editor		9-pin D-sub, RS-422A
Switcher panel		9-pin D-sub, loop-through, RS-422A
Aux		9-pin D-sub, loop-through, RS-422A
GPI		15-pin D-sub, 4 inputs, 4 outputs, programmable
Network		(DME-7000 only) 15-pin D-sub, Ethernet 10BASE 5
Terminal		(DME-7000 only) 9-pin D-sub, RS-232C

Video Specifications

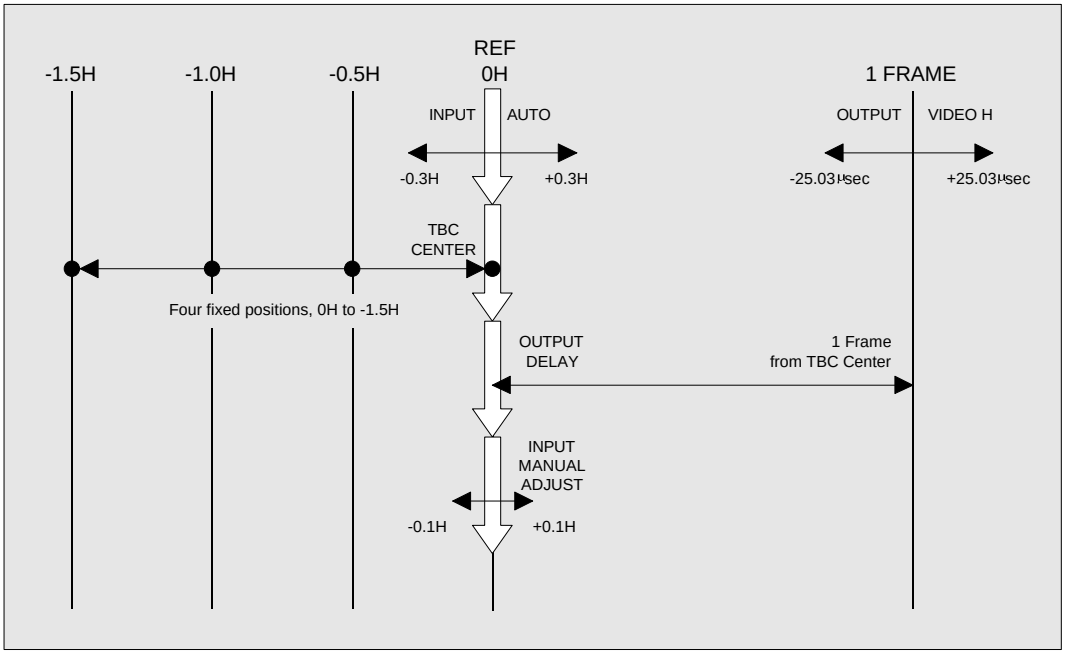
The following table lists video specifications for the DME-3000 and DME-7000 systems. All specifications are identical except where noted.

DME-3000/7000 Input, Output, Video Specifications

Parameter	Specification	
	Component System	**Composite System**
Reference video in	Analog black or sync, loop-through	Analog black burst, loop-through
Digital video input	Serial component digital .....(A/B)	Serial composite digital .....(A/B)
Digital key input	Serial component digital .....(A/B)	Serial composite digital .....(A/B)
Digital video output	Serial component digital x2	Serial composite digital x2
Digital key output	Serial component digital x2	Serial composite digital x2
Analog key input	1.0 Vp-p .....(A/B)	1.0 Vp-p .....(A/B)
Analog Video/Y input	1.0 Vp-p .....(A/B)	Composite .....(A/B)
Analog R-Y input	0.7 Vp-p .....(A/B)	—
Analog B-Y input	0.7 Vp-p .....(A/B)	—
Analog key output	1.0 Vp-p x2	1.0 Vp-p x2
Analog Video/Y output	1.0 Vp-p x2	Composite x2
Analog R-Y output	0.7 Vp-p x2	—
Analog B-Y output	0.7 Vp-p x2	—
Analog sync output	2.35 Vp-p x2	—
Combiner Video/Y input	Serial component digital	Serial composite digital
Combiner Key/Z input	Serial component digital	Serial composite digital
Combiner EXT/C input	Serial component digital	Serial composite digital
Combiner Z input	Serial component digital	Serial composite digital
Combiner Video/Y output	Serial component digital	Serial composite digital
Combiner Key/Z output	Serial component digital	Serial composite digital
Combiner EXT/C output	Serial component digital	Serial composite digital
Combiner Z output	Serial component digital	Serial composite digital
Frequency response	Y: 0.5 to 5 MHz, ±0.8dB R-Y/B-Y: 0.5 to 2.5 MHz, ±0.8dB	0.5 to 4.2 MHz, ±0.5dB
K factor	Less than 1%	Less than 1%
S/N ratio	**DME-7000:** 55dB or above **DME-3000:** 55dB	**DME-7000:** 55dB or above **DME-3000:** 55dB
Sampling clock	13.5 MHz	14.3 MHz
Quantization	10 bits	10 bits
Delay	1 frame	1 frame
Linearity	—	DG: less than 2% DP: less than 2°

System Timing Requirements

The chart below shows input and output timing for the DME-3000/7000 systems.



DME Series System Phase Timing Chart

Please note the following important points:

- Values apply to input video, input key, and external input signals.
- The TBC Center is adjustable from 0H to -1.5H in four fixed increments. This adjustment compensates for switcher throughput errors when signals are routed from an Aux Bus. (For example, the DVS-7000 has a throughput delay of 1H.)
- The automatic correction range (TBC window) is applied within a range of +/- .3H.
- DME outputs are delayed for 1 frame from the input.
- The output phase is adjustable within a range of +/- 25.03 µsec.

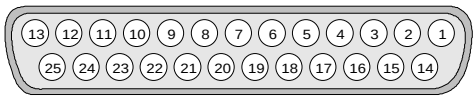
DME-3000/7000 Chassis Connectors

The following chassis connectors are listed in this section:

- RS-422A Control Panel 25-Pin
- RS-422A Control Panel 9-Pin
- RS-422A Editor
- RS-422A Switcher Panel
- RS-422A AUX
- GPI

RS-422A Control Panel 25-Pin

The following table lists **RS-422A 25-Pin Control Panel** connector specifications:

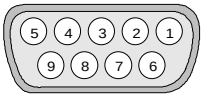


RS-422A 25-Pin Control Panel Connector Specifications (female)

Pin #	Signal	Function
1	FG	Frame ground
2	POWER	Power supply (+ 12V)
3	TX-A	Transmitted data (–)
4	GND	Common ground
5	RX-A	Received data (–)
6	—	—
7	—	—
8	—	—
9	VD-A	Transmitted VD signal (–)
10	—	—
11	—	—
12	GND	Common ground
13	GND	Common ground
14	POWER	Power supply (+ 12V)
15	POWER	Power supply (+ 12V)
16	TX-B	Transmitted data (+)
17	GND	Common ground
18	RX-B	Received data (+)
19	—	—
20	—	—
21	—	—
22	VD-B	Transmitted VD signal (+)
23	—	—
24	—	—
25	FG	Frame ground

RS-422A Control Panel 9-Pin

The following table lists **RS-422A 9-pin Control Panel** connector specifications.

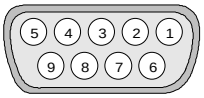


RS-422A 9-pin Control Panel Connector Specifications (female)

Pin #	Signal	Function
1	FG	Frame ground
2	TX-A	Transmitted data (–)
3	RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (–)
9	FG	Frame ground

RS-422A Editor

The following table lists **RS-422A Editor** connector specifications.

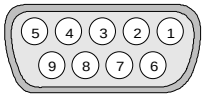


RS-422A Editor Connector Specifications (female)

Pin #	Signal	Function
1	FG	Frame ground
2	TX-A	Transmitted data (–)
3	RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (–)
9	FG	Frame ground

RS-422A Switcher Panel

The following table lists **RS-422A Switcher Panel** connector specifications:

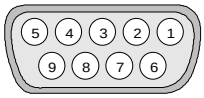


RS-422A Switcher Panel Connector Specifications (female)

Pin #	Signal	Function
1	FG	Frame ground
2	TX-A	Transmitted data (–)
3	RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (–)
9	FG	Frame ground

RS-422A AUX

The following table lists **RS-422A AUX** connector specifications:

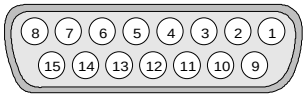


RS-422A AUX Connector Specifications (female)

Pin #	Signal	Function
1	FG	Frame ground
2	TX-A	Transmitted data (–)
3	RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (–)
9	FG	Frame ground

GPI

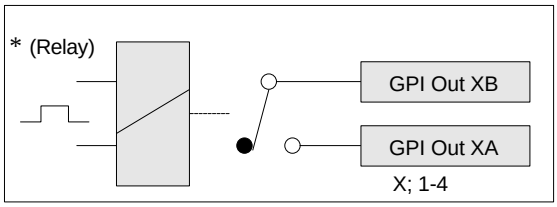
The following table lists GPI connector specifications:



GPI Connector Specifications (female)

Pin #	Signal	Function
1	GND	Ground
2	GPI Out 1B	General-purpose relay output (B) *
3	GPI Out 2B	
4	GPI Out 3B	
5	GPI Out 4B	
6	GPI In 1	General-purpose input
7	GPI In 3	
8	GPI In Com	Ground
9	GPI Out 1A	General-purpose relay output (A) *
10	GPI Out 2A	
11	GPI Out 3A	
12	GPI Out 4A	
13	GPI In Com	Ground
14	GPI In 2	General-purpose input
15	GPI In 4	

Note:



GPI outputs are also used for on-air tally functions.

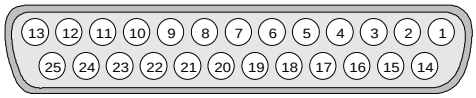
DME-3000/7000 Control Panel Connectors

The following connectors are listed in this section:

- Processor
- Monitor
- Spare

Processor

The following table lists **RS-422A Processor** connector specifications:

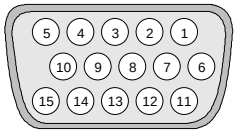


RS-422A Processor Connector Specifications (female)

Pin #	Signal	Function
1	FG	Frame ground
2	POWER	Power supply (+ 12V)
3	TX-A	Transmitted data (–)
4	GND	Common ground
5	RX-A	Received data (–)
6	—	—
7	—	—
8	—	—
9	VD-A	Transmitted VD signal (–)
10	—	—
11	—	—
12	GND	Common ground
13	GND	Common ground
14	POWER	Power supply (+ 12V)
15	POWER	Power supply (+ 12V)
16	TX-B	Transmitted data (+)
17	GND	Common ground
18	RX-B	Received data (+)
19	—	—
20	—	—
21	—	—
22	VD-B	Transmitted VD signal (+)
23	—	—
24	—	—
25	FG	Frame ground

Monitor

The following table lists **Monitor** connector specifications:



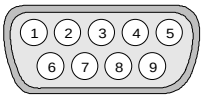
(Female)
External View

Monitor Connector Specifications

Pin #	Signal	Function
1	R	R output. 0.714 V p-p (± 10%)/75 Ω
2	G	G output. 0.714 V p-p (± 10%)/75 Ω
3	B	B output. 0.714 V p-p (± 10%)/75 Ω
4	GND	Ground
5	—	—
6	GND	Ground
7	GND	
8	GND	
9	—	—
10	GND	Ground
11	GND	Ground
12	—	—
13	H sync	H sync output (TTL level)
14	V sync	V sync output (TTL level)
15	—	—

Spare

The following table lists **RS-232C Spare** connector specifications:

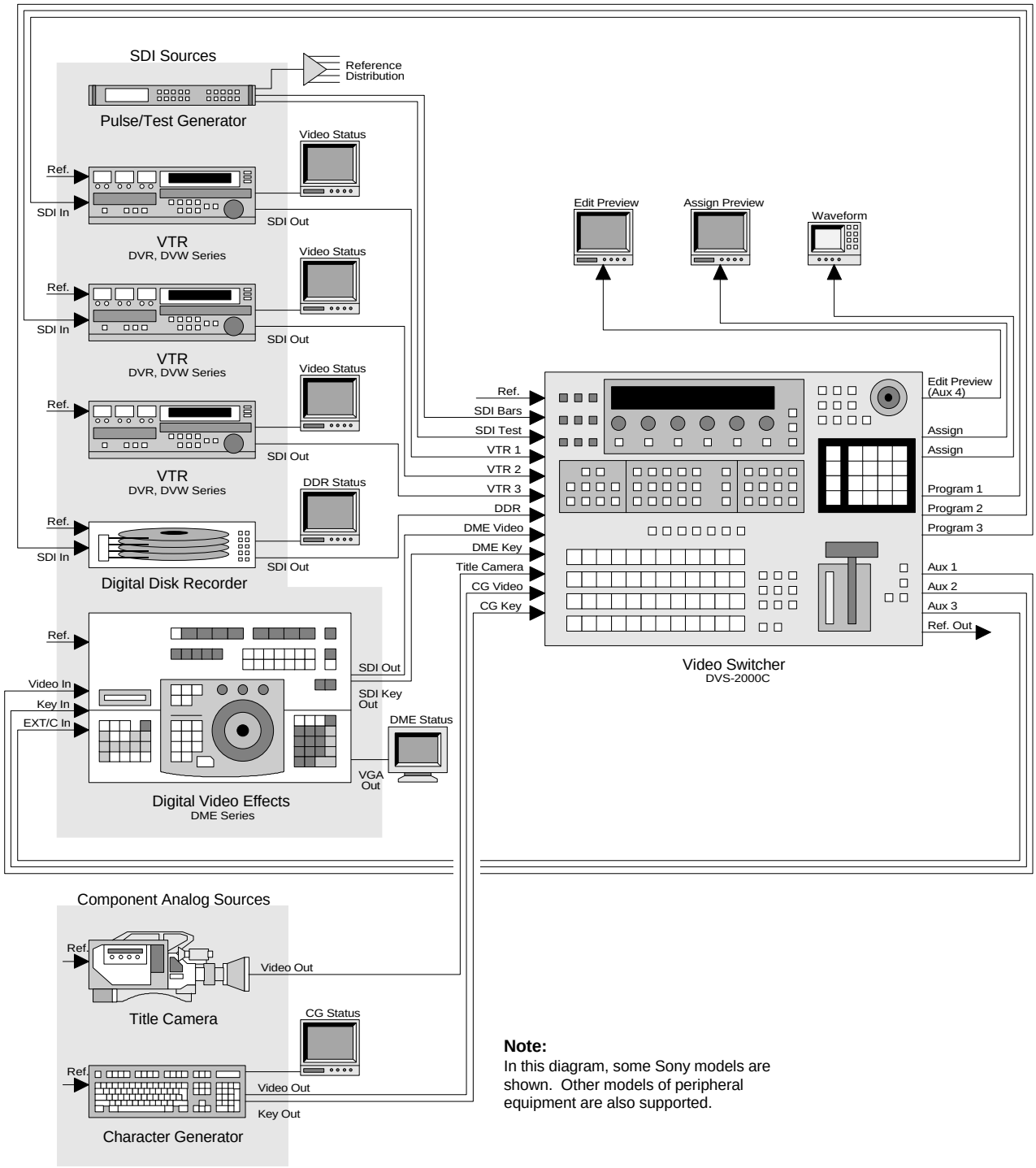


RS-232C Spare Connector Specifications (male)

Pin #	Signal	Function
1	—	—
2	TXD	Transmitted data
3	RXD	Received data
4	DTR	Data terminal ready
5	SG	Signal ground
6	—	—
7	RTS	Request to send
8	—	—
9	—	—

DME-3000/7000 System Interconnection Chart — Video

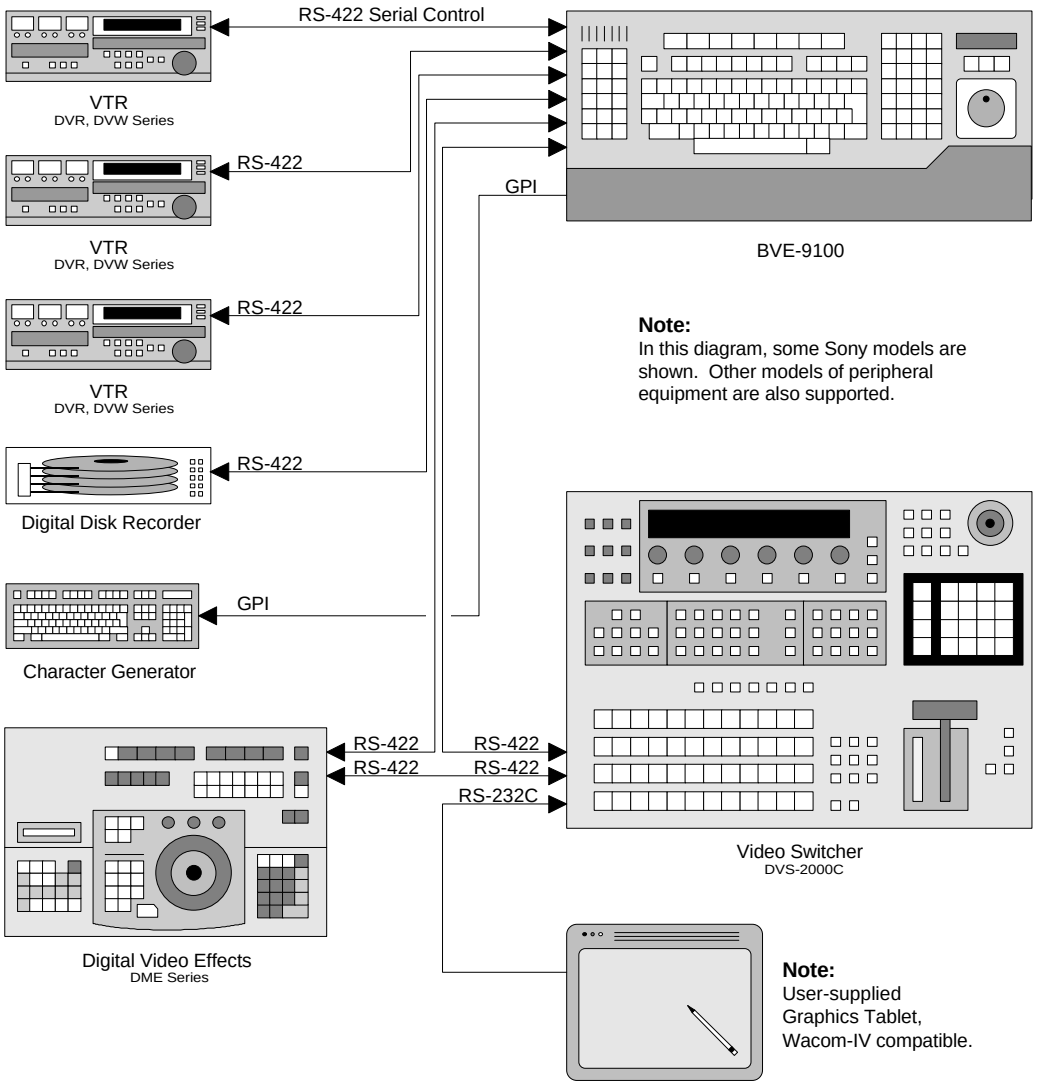
The simplified diagram below illustrates a typical system that includes a DME-series effects unit and a DVS-2000C switcher. Video connections *only* are shown.



Note:
In this diagram, some Sony models are shown. Other models of peripheral equipment are also supported.

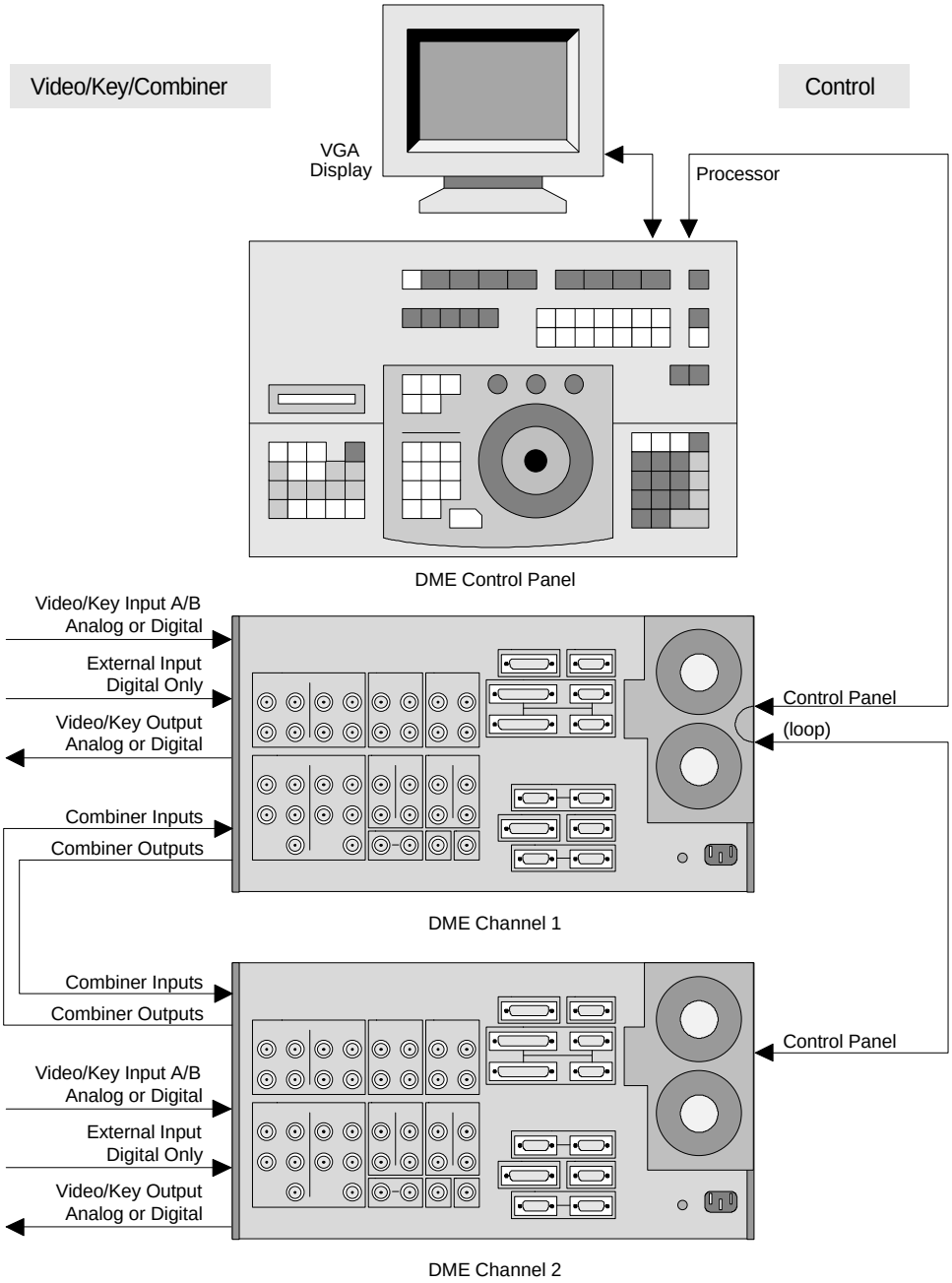
DME-3000/7000 System Interconnection Chart — Control

The simplified diagram below illustrates a typical system that includes a DME-series effects unit and a DVS-2000C switcher. Control connections *only* are shown.



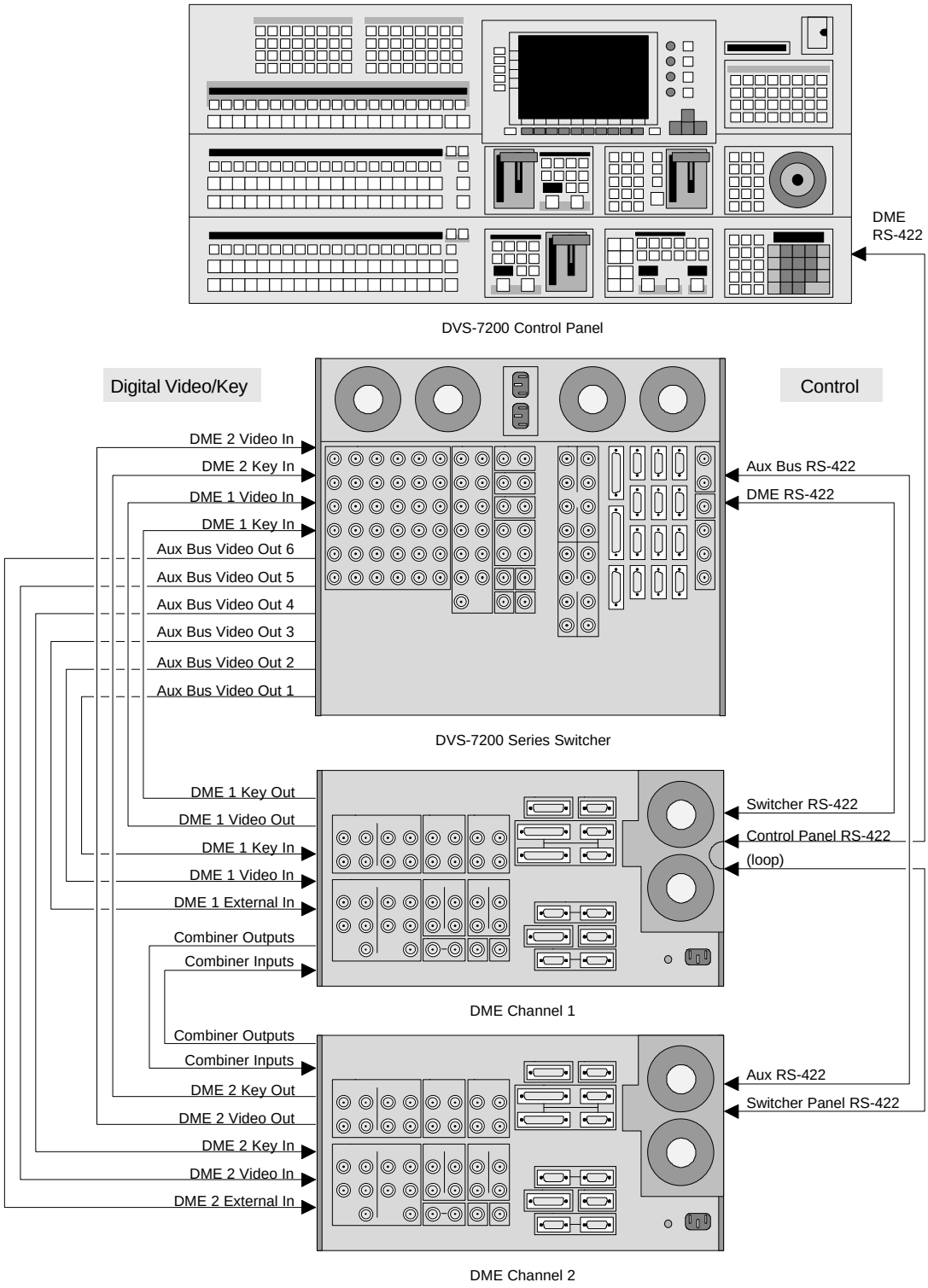
DME-3000/7000 Stand Alone Configuration

The simplified diagram below illustrates a typical system that includes two DME channels. Video and key sources can be provided through a wide variety of options, based on customer requirements.



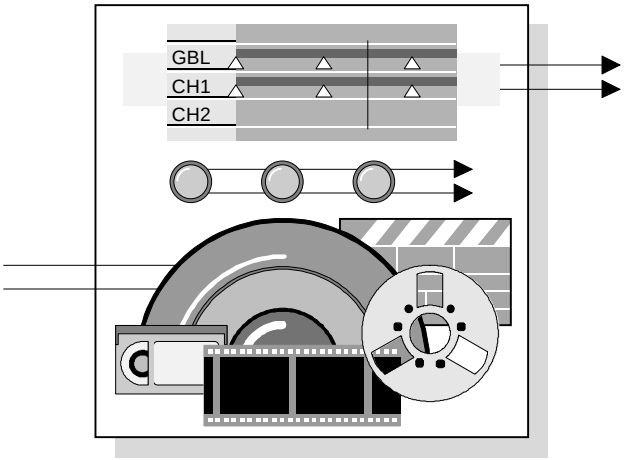
DME-3000/7000 Interconnection with DVS-7000 Series

The simplified diagram below illustrates a typical system that includes two DME channels and a DVS-7000 series switcher.



Appendix A. Feature List

DME-3000/7000 — Feature By Feature



This Appendix provides a table of DME-series effects, along with brief descriptions of each. All features are cross-referenced in the index.

Note that all features discussed in this section use Sony terminology.

Standard Effects

The following table lists standard effects provided on the DME-3000 and DME-7000 systems.

Standard Effects

Effect	Description
3-D Transform	
3-D Location & Rotation	Provides ability to locate the image in 3-D coordinate space, and rotate the image around the X, Y, and Z axes.
Axis Location	Provides ability to relocate the axis of rotation, anywhere on or off the plane of the image, within the screen boundaries.
Compression/Expansion	Provides the ability to re-size the image using 3-D location and size functions.
Perspective	Provides the ability to increase or decrease image perspective.
Skew	Provides the ability to change the image rectangle into a parallelogram on both the X and Y axes.
Aspect	Provides the ability to stretch or compress the X or Y axis individually, altering the image's aspect ratio.
Flip/Tumble	Provides the ability to flip the image (around the X axis), and tumble the image (around the Y axis).
Background and Edge	
Color Background	When used as a full-screen source, the background over which the image is manipulated can be changed. Backgrounds consist of flat matte color, color wash, emboss, or external video. (External video requires digital component operation with the combiner option.)
Border (Inner/Outer, Softness)	Adds a border around the image. The border can be filled with flat matte color, color wash, emboss, or external video. (External video requires digital component operation.)
Crop	Provides the ability to trim individual edges of the image (top, bottom, left, and right).
Drop Shadow (2-D linear)	Provides the ability to place a shadow below the processed image.
Freeze Effects	
Input Freeze	Provides the ability to freeze primary input video and key signal, upstream of all image transformations.
Picture Modify	
Multi Move	Provides the ability to create multiple copies of the manipulated image, downstream of all transformations. You can control the number of images, the relative offset, the aspect ratio, and size.

Standard Effects (continued)

Effect	Description
Picture Modify (continued)	
Defocus/Blur	Defocus and Blur may be applied to an image's primary video or key signal.
Defocus/Blur (Key)	Allows you to defocus and blur the key signal (only).
Video Modify	
Posterization/Solarization	Provides the ability to posterize the luminance and solarize the chrominance components of an image.
Sepia, Mono, Negative	Provides the ability to add a tint to the image. You can select from sepia tone, monochrome, or negative. The tint originates from the internal matte generator or from external video. (External video requires digital component operation.)
Contrast	Provides the ability to change the contrast of the image's luminance and chrominance components.
Mosaic	Provides the ability to break the image into tiles of variable size and aspect ratio.

Optional Effects

The following table lists optional effects offered on the DME-3000 and DME-7000 systems.

Optional Effects

Effect	Description
Background and Edge	
Target Drop Shadow	Provides the ability to cast a shadow from the image, after image transformations.
3-D Shadow (Advanced Shadow) (DME-7000 only)	Provides the ability to manipulate the size, perspective, location and blurring of the shadow that is cast from the manipulated image.
Brick (DME-7000 only)	Provides the ability to create two-sided slabs or three-sided bricks — with a single channel of DME-7000.
External Key Border (DME-7000 only)	Provides the ability to add a border around a keyed image, following the shape of the external key itself.
Glow (DME-7000 only)	Provides the ability to blur the luminance values in an image, creating a hazy glow or film-type "scrim" effect.
Wipe Crop	With the Wipe/Graphics option, uses the DME's internal wipe patterns to mask the edges of the manipulated image.
Multi-Freeze	Provides the ability to grab and freeze a series of images, either in a random or pre-defined pattern of tiles.
Color Mix	Provides the ability to create a color wash, which can then be applied to the drop shadow, the border, the brick edge, and the background.
Graphics	Provides a graphical wire-frame overlay that appears on your output video. Allows easy numeric manipulation of images in 3-D space.

Optional Effects (continued)

Effect	Description
Freeze and Recursive Effects	
Recursive Effects	Provides the ability to retain an image in an internal buffer, and apply varying levels of decay to the resulting motion path.
Wind (DME-7000 only)	Provides the ability to create a trail that falls back and away from an image. You can modulate the motion of the "wind" trail, defocus it, and have the trail disintegrate into pixels.
Rainbow Color Trail (DME-7000 only)	Allows you to create trails with a variety of rainbow colors. This manipulation can be applied to recursive effects or wind.
Trail Defocus (DME-7000 only)	Allows you to create defocused trails. This manipulation can be applied to recursive effects or wind.
Picture Modify	
Advanced Defocus/Blur (Clean Defocus)	Provides the ability to blur and defocus an image, with mach noise cancellation.
Blur/Defocus Mask	Provides the ability to mask the screen region that is defocused or blurred, using the internal wipe generator.
Dim/Fade (Requires combiner option)	With an image rotated in perspective, provides the ability to select a point at which the images "dims" to black, or "fades" away to transparency.
Non Linear Effects	
Wave	Applies modulation to the image in both the horizontal and vertical directions.
Mosaic Glass	Modulates the image to give the appearance of looking through a glass tile.
Flag	Provides the ability to modulate the image, simulating the waving of a flag.
Ripple	Modulates the image to give the appearance of ripples on the surface of water.
Rings	Breaks the image into concentric rings, with the ability to spiral and explode.
Broken Glass	Breaks the image into shards of glass, with the ability to spiral and explode.
Flying Bars	Allows you to break the image into "slats" of video, with the ability to change the angle and width of the flying bars.
Split	Provides the ability to split the image into four sections, with variable section width and height.
Split Slide	Combines the Flying Bars and Split effects.
Character Trail	Allows you to take the video contents of the image itself and create a trail that appears to "pull" the picture on or off screen. Also functions with an external key.
Mirror	Takes a selected portion of the picture and creates a mirror image, either horizontally, vertically, or both.
Lens	Allows you to increase the magnification of a selected portion of the image. The lens shape can be a circle, rectangle, star, heart, bar, or cross.
Circle	Provides the ability to take the corners of an image and pull them (towards the center) into a circular shape.
Panorama	Allows you to stretch an image horizontally into a wide-angle panoramic view.

Optional Effects (continued)

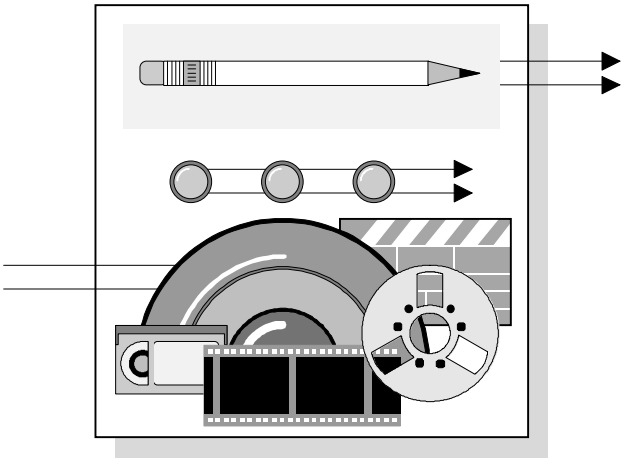
Effect	Description
Non Linear Effects (continued)	
Page Turn	Provides the ability to pull one image edge inwards, overlapping the remainder of the picture — simulating the turning of a page. In digital component operations, you can have separate images on the front and back.
Roll	Same effect as page turn, but with the added capability of rolling up the image as it overlaps.
Cylinder	Allows you to shape the image into a three-dimensional cylinder, which is visually realistic and hollow.
Sphere	Allows you to shape the image into a three-dimensional sphere or globe.
Digital SPARKLE Effects	
Ripple 2	Similar to Ripple, with the added visual quality of radial spokes that can be placed onto the edge of the image.
Explosion	Allows you to expand the image into pixels, from a center point outward.
Swirl	Provides the ability to manipulate the image into a spiral or swirling shape, with selectable position and area.
Melt	Allows you to melt or "drip" an edge of the image, either onto or off of the screen. A variety of shapes can be used for the melting edge.
Kaleidoscope	Breaks the image visually into a kaleidoscopic view, with the ability to rotate the view and change the number of mirrors used.
Multi-Mirror	Similar to Mirror, but with the ability to mirror multiple portions of the image.
Twist	Allows you to twist the image into a corkscrew.
Blind	Divides the image into several elements or slats, creating a variety of venetian blind effects.
Digital SKETCH Effects	
Sketch	Provides the ability to add a pastel or oil-painting appearance to the image.
Enhanced Edge	Detects edges of images within the frame, and adds an enhanced color.
Drawing	Creates a line drawing based on the edges within the image. The drawing may be placed over a canvas of flat color or stored video.
Relief	Provides the ability to emboss or de-boss the image.
Color Grabber	Allows you to pick a color from the screen, and copy it to several internal matte generators or eight memory registers. Greatly simplifies the task of matching internal colors to image colors.
Beveled Edge	Allows you to apply a beveled edge to the image's border, and adjust its width and aspect ratio. You can apply a light source or matte color to the bevel.

Optional Effects (continued)

Effect	Description
Lighting	
Pattern Select	Provides plain bar and circle shapes for standard lights.
Position	Allows you to position the light as it falls on the image. Non-linear effects such as page turn have an automatic light-position function.
Light Modifier	Light colors, intensity, softness, and shadows may be changed.
Spot Light	Allows you to create a spot light of varying size and shape. The spot light is applied to the image prior to non-linear transformations.
Spot Light Pattern Select	Allows patterns (provided by the BKDM-3040) to generate spot light shapes.
Spot Light Modifier	Allows you to change a spot light shape using horizontal and vertical modulation. Fringe, spring, and spiral edges can also be applied.
Target Spot Lighting	Fixes a light in 3-D space, which an image can then pass under or over.
Target Lighting	With DME keyed over a switcher background, or when used with DME's internal background, provides three creative possibilities:
Foreground Only mode:	Applies lighting to the image's foreground. Light is cast from *space* — DME image is lit as it moves under the light.
Background Only mode:	Applies light to the image *over which* DME image is keyed. DME image movement covers up background light.
Foreground Background mode:	Applies light to the foreground and background together. DME image is lit as it moves *under* the light, and background light is not affected.
Digital Color Effects	
Color Correction (DME-7000 only)	A Color Correction (CCR) process may be applied to either the main or duality "sub" channel. Conversion of 4:2:2 signals to RGB provides primary color correction for gain, black level, gamma, and knee of red, green and blue color space components.
Metallic Effect (DME-7000 only)	These color effects add a metallic luster to any input image. The base metal can be gold or silver, and you can also modify the image with a rainbow of colors. The metallic effect can be applied to either primary video or to video provided from the EXT/C input connector.
Duality (DME-7000 only)	This mode provides the ability for a second video image to be manipulated within a *single* DME-7000 chassis. The second or "sub" channel may positioned independently of the main channel, or it can be locked in symmetry to the main channel.
Assignable Frame Store	The assignable frame store provided with the BKDM-7020 board can capture input or output images for use as a background, wipe border, or key border.

Appendix B. Related Resources

Related Resources



The following resource information is included in this Appendix:

- Printed Media
- Audio/Video Media

Printed Media

Use the following printed publications for more information on the DME-series:

- Refer to the ***DME-3000/7000 User's Guide*** for a discussion of DME-3000 and DME-7000 operating issues.

  P/N: **3-810-407-01**

- Refer to the ***DME-7000 User's Guide*** for a discussion of DME-7000 operating issues.

  P/N: **3-810-397-01 (E1)**

- Refer to the ***DME-3000 Installation Guide*** for a discussion of installation issues.

  P/N: **3-182-905-03 (E1, R2)**

- Refer to the ***DME-3000 Maintenance Guide*** for a discussion of maintenance issues and troubleshooting to board level.

  P/N: **3-182-906-01 (E1, Part 1)**
  9-967-562-03 (S1, Part 2)
  9-967-562-06 (S2, Part 2)
  9-967-562-10 (S3, Part 2)

- Refer to the ***DME-3000/7000 Maintenance Guide*** for a discussion of maintenance issues and troubleshooting to component level.

  P/N: **9-967-639-01 (Vol. 1, E1, Part 2)**
  9-967-640-01 (Vol. 2, E1, Part 2)

- Refer to the ***DME-3000/7000/BKDM-3010 Maintenance Guide*** for a discussion of primary maintenance issues.

  P/N: **3-190-061-01 (E1, Part 1)**

- Refer to the ***DME-3000/BKDM-3010 Maintenance Guide*** for a discussion of primary maintenance issues.

  P/N: **9-967-521-02 (E1, R1)**

- Refer to the ***DME-3000 Product Brochure*** for an overall discussion of DME-3000 features, system configurations, and specifications.

  P/N: **BC-00526**

- Refer to the ***DME-7000 Product Brochure*** for an overall discussion of DME-7000 features, system configurations, and specifications.

  P/N: **BC-00525-A**

Audio/Video Media

Use the following audio/video publications for additional reference information on the DME-series:

- Refer to the ***DME-2000C/DME-3000 Pinky & Greenie*** videotape for a comprehensive demo of the DVS-2000C and DME-3000 capabilities.

  P/N: **BC-00557**

- Refer to the ***DME-7000 & DME-3000 Effects Clips*** tape for a demonstration of the DME system's effects capabilities.

  P/N: **BC-00576**

- Refer to the ***DME-7000 ESPN Xtreme Games*** videotape for examples of on-air DME effects, plus testimonials.

  P/N: **BC-00617**

- Refer to the ***Mid-Market DME-7000 Testimonial*** videotape for examples of DME effects plus testimonials.

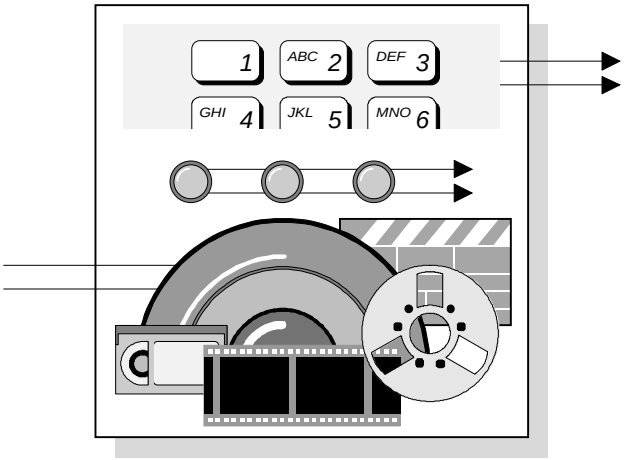
  P/N: **BC-00605**

- Refer to the ***MultiMedia Magazine "Restaurant de DME-7000"*** CD ROM for a superb audio/video tour of the DME-7000's capabilities.

  P/N: **BC-00540**

Appendix C. Sales and Service

General Information and Reference



The following information is included in this Appendix:

- Regional Sales Offices
- Regional Service Centers
- National Parts Centers
- Emergency Response System
- SUPPORTNET℠
- SOFTWAREPLUS℠

Regional Sales Offices

Sony Regional Sales Offices are located in the following areas:

- **Northeast Regional Sales Office**

  123 W. Tryon Ave.
  Teaneck, NJ 07666
  Main Number: (201) 833-5300
  Fax Number: (201) 833-5850

- **Southeast Regional Sales Office**

  3175 A. Northwoods Parkway
  Norcross, GA 30071
  Main Number: (770) 263-9888
  Fax Number: (770) 441-8870

- **Midwest Regional Sales Office**

  1200 North Arlington Heights Road
  Itasca, IL 60143
  Main Number: (630) 773-6000
  Fax Number: (630) 773-7623

- **Southwest Regional Sales Office**

  8400 Esters Blvd., Suite 500
  Irving, TX 75063-2214
  Main Number: (972) 915-3100
  Fax Number: (972) 915-3235

- **West Regional Sales Office**

  10833 Valley View Street
  Cypress, CA 90630-0016
  Main Number: (714) 220-9100
  Fax Number: (714) 229-4159

Regional Service Centers

Sony Regional Service Centers are located in the following areas:

- **Northeast Regional Service Center**

  123 W. Tryon Ave.
  Teaneck, NJ 07666
  Main Number: (201) 833-5300

- **Southeast Regional Service Center**

  3175 A. Northwoods Parkway
  Norcross, GA 30071
  Main Number: (770) 263-8016

- **Midwest Regional Service Center**

  1200 North Arlington Heights Road
  Itasca, IL 60143
  Main Number: (630) 773-6037

- **Southwest Regional Service Center**

  8400 Esters Blvd., Suite 500
  Irving, TX 75063-2214
  Main Number: (972) 915-3220

- **West Regional Service Center**

  10833 Valley View Street
  Cypress, CA 90630-0016
  Main Number: (714) 229-4100

National Parts Centers

Sony National Parts Centers are located in the following cities:

- **San Jose, CA**

  For Broadcast parts:
  (800) 538-7550

- **Kansas City, MO**

  For Professional Audio parts:
  (800) 331-6679, (800) 654-0962 (in MO)

  For Business/Industrial parts:
  (816) 891-7550, (816) 891-7435 (after-hours)

Emergency Response System

Use Sony's Emergency Response System for after-hours technical support.

1. Call (408) 435-8910
2. Using a touch-tone phone, select the desired primary category from the four (4) menu selections, then the appropriate secondary category. If a selection is not made from a touch-tone phone, the system will terminate the call.

   Menu 1: Technical Assistance for Broadcast and Audio/Video Production Products

   1 Digital Video or Type C Recorders

   2 Betacam® or Umatic® Products

   3 Video Editors or Switchers

   4 Library Management System™ or Betacart® Systems

   5 Professional Audio

   6 Camera or Monitor Products

   7 High Definition Video Systems

   8 Repeat Primary Menu Selections

   Menu 2: Technical Assistance for Other Business and Professional Products

   1 Videoconferencing Systems

   2 Jumbotron® Systems

   3 Medical Systems

   4 Repeat Primary Menu Selections

   Menu 3: Emergency Parts System

   Menu 4: Repeat Primary Menu Selections

3. When prompted, leave your name, company, a telephone number where you can be reached, model number, and a brief description of the problem. A Sony product specialist will return your call within 60 minutes.

SUPPORTNET[SM]

The SUPPORTNET[SM] program brings all the expertise, responsiveness, and commitment of the company together in a comprehensive package to ensure continued customer satisfaction. In addition to Time and Materials (T&M) service, which is available to customers who require support on a per-call basis, a variety of programs are available to meet varying needs:

- **UpTime APS**

  Improves uptime and ease of care, thanks to professional on-site hardware support by Sony engineers and optional application support.

- **Technical Education**

  Sony technical training enhances the customer's knowledge of the Sony products and their maintenance. This enables the customer to take a more active role in maximizing the potential of the product.

- **Technical Publications**

  Technical Bulletins are published monthly with timely information regarding the servicing and maintenance of Sony products. A CD ROM is available with all Technical Bulletins, parts pricing, and selected exploded diagram views. Tech manuals are also available.

Optional software Application Support provides the following:

- Maintenance and enhancement releases. This item does *not* include software sold separately or product options.
- Telephone support for software and application issues.
- Discounts on selected new and optional software products.
- Automatic enrollment in SOFTWAREPLUS[SM] service program.

SOFTWAREPLUS[SM]

Purchasers of Sony Production Systems products are automatically enrolled into the SOFTWAREPLUS[SM] program. This service includes the following:

- Notification of software releases
- Tracking of each customer's unique system configuration and software requirements.
- Access to the latest software release information, including current versions, features, and pricing.
- Product registration for warranty software upgrades.
- Authorized upgrade pricing.

The telephone number for SOFTWAREPLUS[SM] is **(408) 955-6300**.

Glossary

4:2:2

The ratio between the digital component video sampling frequencies, specified in CCIR-601, for main digital studio equipment. The frequencies are 13.5 MHz for Luminance, and 6.75 MHz for each of the two Chrominance signals.

4:2:2:4

A signal which consists of a 4:2:2 signal for Luminance and Chrominance information plus a key signal sampled at the same rate as the luminance signal.

4:4:4:4

A digital video signal which has identical sampling rates for the luminance, chrominance, and key signals.

Archive Recorder

Also known as “cache” recorder. Special designation for a recorder in which all events are recorded sequentially, without overlaps. Used to preserve each layer during complex multi-layer sequences.

Auxiliary Bus

Also called “Aux” buses, auxiliary buses are extra switching buses that allow video signals connected to the switcher to be routed to external equipment such as digital effects systems and VTRs. Some switchers such as the DVS-2000C have multiple Aux buses as an option.

B-roll

Essentially a copy of a clip or a sequence. Without the availability of pre-read, the “to” and “from” sources in a transition must be on separate reels. If they are not, a B-roll must be made in order to perform the transition.

Background

One of the video sources involved in keying. Specifically, the background video is the signal which has portions of it *replaced* with the key (or foreground) signal. Using chroma key as an example in a weathercast, the background is the weather map and the foreground is the weathercaster. The foreground signal is often referred to as cutting a “hole” in the background video signal.

Border

In switcher terminology, a thickened edging, similar to a picture frame, placed around a key signal, a digital effect, or the edges of a wipe pattern. Typically, the thickness, softness, and color of the border are completely adjustable.

Bus

A means by which one input can be selected from among several different inputs. The output of the bus is then sent to a specific destination, either internal or external to the switcher. A minimum of two buses are required to perform a simple mix, wipe, or key operation.

CCIR-601

CCIR Recommendation 601, "Encoding Parameters of Digital Television for Studios," is a recommendation adopted in 1986 by the CCIR (Comite Consulatif International des Radio-communications) which concerned digital component video systems in the 525 and 625 line standards. The document specifies sampling rates for digital video.

Chroma Key

A type of key where the hole-cutting information is derived from a *color* rather than from a video level. A common example of chroma key is when the weathercaster appears to be standing in front of a map. The map is an electronic signal, and the weathercaster is in fact standing in front of a solid blue or green screen. The Chroma Key process electronically subtracts the color from the foreground image, and replaces it with video from the background image to form a *composite* image.

Clip

Also know as a "segment" or "scene." Describes a continuous length of source footage, long or short, the duration of which is defined by an inpoint (head frame) and an outpoint (tail frame).

Color Correction

The process of adjusting primary color space components for RGB or Y/R-Y/B-Y. Color correction can also be applied to secondary color space components within the ranges of additional color spectrums.

Crosspoint

The video switch which selects the source required on a particular switcher bus.

Depth Key

A DVS-2000C option that permits keys in the *third dimension*, using the "Z" axis or *depth* axis in XYZ coordinate space. Depth information can be derived from a full-screen video source, a key source, the main mask, a subsidiary mask, or by using "Z-data" from the DME-3000 or DME-7000. The feature allows you to perform *visually* complex keys without the need for complex masks, timelines, and repeated priority switching.

Digital Video

Video which is described by discrete voltage levels (represented by numbers) as opposed to the infinite range of values possible with analog video. Among its advantages, Digital Video may be copied with little or no change from one generation to the next.

Distributed Processing

A software technique whereby the master processor (Main CPU) delegates lesser tasks to other CPU's in the system, thereby freeing its time for more important work.

DMC Motion Memory

Also called Dynamic Motion Control. The ability for the BVE-9100 editing system to learn (and repeat) the precise playback speed and direction of a VTR during a slow motion sequence. Both simple events, with a single slow-motion speed, and complex events, with ramping speed, freezes, and direction changes fall into the DMC category.

DME

Sony's term for Digital Multi-Effects.

Downstream Keyer

Also called a DSK, a downstream keyer electronically appears after all other switcher functions — visually on top of all other layers and buses. Any operations performed on the switcher M/Es will not affect the downstream key video.

E-File™

The Sony trademarked system for switcher effects memory. One E-File contains a "snapshot" of the switcher control panel, including all settings and crosspoint selections.

Edit Data Page

Also known as the Edit Screen, the BVE-9100's main operating menu in which the editor sets up events and transitions, marks timecode, and manages the EDL.

Editor

An electronic device for controlling and synchronizing a variety of broadcast production components with frame accuracy. Used to produce television programs. Also called an "editing system."

EDL

Edit Decision List. A single file stored on the editing system's hard disk that contains information for each event used in a video program. When re-editing is required, this information is used to re-create events, exactly as they were initially recorded. EDL events are comprised of data fields, such as source and record VTR

inpoints, outpoints, reel numbers, mode (V, A1, A2), transitions (Cut, Dissolve, Wipe), and peripheral device effects data. There can be multiple EDL files on disk.

Effects Pathway

A switcher feature in which video from a keyer is routed to external devices (for example, a DME), and then returned to the switcher for additional processing. Sony's term for the Effects Pathway is Processed Key.

Ethernet

A computerized network (and system of protocols and commands) for transferring data between electronic devices.

Fader Arm

The lever on a switcher that manually controls the progress of an effect. The position of the level typically controls the amount of the A-Bus signal and the B-Bus signal that contributes to the mix, wipe, or key. On the DVS-2000C, the Fader Arm also controls the DME timeline.

GPI (General Purpose Interface)

A communications port that controls "triggering" with frame-accuracy. Typically used with devices that do not have serial control capability. On an editing system, the GPI port typically *sends* trigger pulses to peripheral devices. On devices such as switchers and digital effects, the GPI port typically *receives* triggers from the editor.

GUI

Graphical User Interface. A term that describes a status display based on graphics and icons, rather than strictly on numbers and letters.

Initialization Menu

A secondary BVE-9100 menu used to set up EDL specifications and overall system "preferences" such as preroll and color framing.

Interface

A set of software instructions that allows the editing system to control a peripheral device such as a VTR, ATR, DVE or switcher. The better the interface, the greater the ease with which the operator can assemble a program.

Key Clip, Gain, Density

Also called "Clip," in switcher terminology, the process of fine-tuning a key — of any type (luminance, linear, or chroma). Clipping sets the threshold for the hole-cutting circuitry, while "gain" defines the range and sensitivity of adjustment. The "density" is the transparency or opacity of the key, as revealed over a background. A hole will be cut in the Background video in any location where the Foreground luminance level is greater than the clip level. "Fill" video replaces the holes.

Key Fill

The video which fills the hole cut by the keying circuitry. Typically, switchers provide a variety of choices for the fill source — internal mattes, external video, or "self" fill are several examples.

Key Mask

A key modification system that protects a portion of the foreground video from being keyed. Most switchers allow you to mask keys with the internal pattern system and associated modifiers.

Key Signal

The signal that electronically cuts the hole in the Background video signal. Key signals can be switcher-generated or originate from external sources such as the DME or character generators.

Keyframe

In a digital effects device, a point along a timeline where an action or change occurs. In a DVE, such as the DME-7000, keyframes occur at specific points of image manipulation. The BVE-9100 controls keyframe timelines for a variety of devices including the DME-series digital effects units and DVS-series switchers.

Keying

The process of superimposing video from one source (the Foreground) on top of another source (the Background). A variety of key "types" are available in most switchers, including Self Key, Linear Key, Chroma Key, and Key Mask.

List management

A set of software tools for manipulating EDL timecode numbers. Tools include the ability to move, copy, and renumber events (and blocks of events), clean overlaps and sort the list.

M/E

Mix/Effects or Mix Effects Amplifier. The portion (or "bank") of a video switcher where video signals are processed to select sources and create mixes, fades, wipes, keys, and other special effects.

Master/Slave Mode

Also known as "Sync Jog." A method for locking two or more source devices together in an edit event. Typically used in situations where the matte is on one reel, and the fill is on another.

Peripheral device

Any device connected to the BVE-9100 via serial communications or GPI. Category includes VTRs, ATRs, Video Switchers, Audio Mixers, Color Correctors, DVEs, and DDRs.

Pre-Read

Also known as “read before write.” The ability for a digital VTR to read digital information (audio and video) off tape - prior to writing the data back on tape.

Preset Bus

The switcher bus that selects the video that will appear *next* on-line or on-air.

Program Bus

The switcher bus that selects the on-line or on-air output signal.

Serial Digital Video

Also called SDI, a digital representation of the video signal that is distributed via a single coaxial cable with BNC connectors. This format is more desirable and cost-effective than a parallel interface which requires multi-conductor cable.

Setup Menu

A secondary BVE-9100 menu used to set up devices, crosspoint assignments and I/O (input/output) communications.

Status reporting

A system of bi-directional communications that allows the panel status of peripheral devices to be reported to (and stored in) the BVE-9100’s EDL in real-time.

TBC

Time Base Corrector. A device used to stabilize a VTR's unstable image. Includes controls for adjusting the brightness, black level, color hue, and color saturation of the video playback.

Time Track

A powerful, software-based feature for finding matching video frames in the EDL. Match frames enable you to synchronize machines and perform clean, seamless transitions in a program. The BVE-9100 has a variety of Time Track modes.

Timecode

A numeric method for identifying video frames with precision. Each frame of video is assigned an unique 8-digit number (hours, seconds, minutes, frames). Enables precise match-frame editing transitions.

Trace

A list management tool that traces back to “original” source reel timecode numbers across multiple EDLs. Let’s say that master tape #1 is a rough cut. If master tape #1 is next used as a source in the second cut (producing master tape #2), the original source reel timecodes are *one EDL generation back*. If the process is repeated again, the original numbers get farther away, but they’re not lost. If you

want to assemble the show using the original source reels, the trace program is used to “recover” the original source in and outpoints.

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